ORION XC

CATx and Fiber DVI Matrix Switch

Cybernetech 株式会社 サイバネテック

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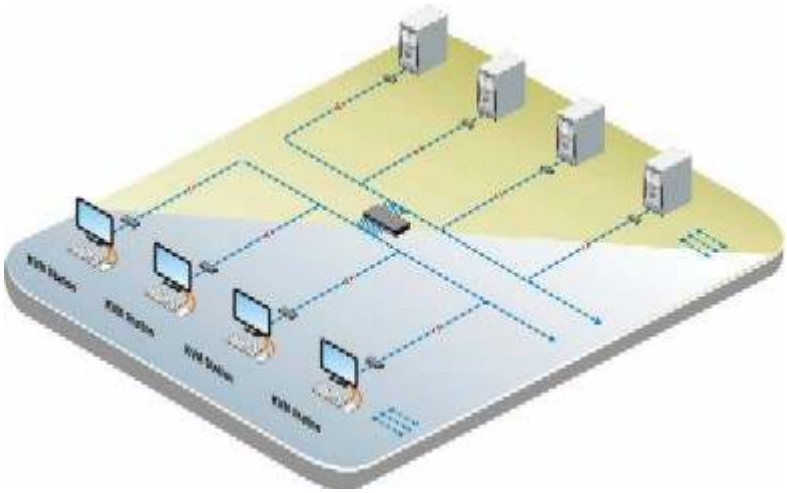

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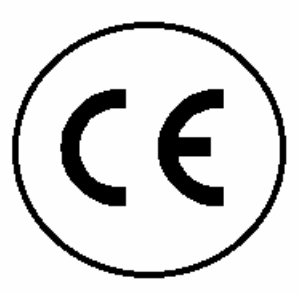
DECLARATIONS OF CONFORMITY

This is to certify that, when installed and used according to the instructions in this manual, together with the specified cables and the maximum CPU- cable length <3m, the Units listed in Appendix B are shielded against the generation of radio interferences in accordance with the application of Council Directive 2004/108/EG as well as these standards:

- EN 55022:2006 + A1:2007 (Class A)
- EN 55024:1998 + A1:2001 + A2:2003



This equipment has been found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

The product safety of the devices is proven by their compliance with the following standards:

- IEC 60950-1A1:2010
- EN 60950-1/A12:2011
- UL 60950-1-2007
- CAN/CSA-C22.2 60950-1-07

The manufacturer complies with the EU Directive 2012/19/EU on the prevention of waste electrical and electronic equipment (WEEE). The device labels carry a respective marking.

These devices comply with Directive 2011/65/EU of the European Parliament and of the council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS 2, RoHS II). The device labels carry a respective marking.

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INTRODUCTION

Disclaimer

While every precaution has been taken in the preparation of this manual, the manufacturer assumes no responsibility for errors or omissions. Neither does the manufacturer assume any liability for damages resulting from the use of the information contained herein. The manufacturer reserves the right to change the specifications, functions, circuitry of the product, and manual content at any time without notice.

The manufacturer cannot accept liability for damages due to misuse of the product or other circumstances outside the manufacturer's control. The manufacturer will not be responsible for any loss, damage, or injury arising directly or indirectly from the use of this product. (See limited warranty.)

Introduction

Thank you for choosing the Rose Electronics Orion™ XC System. The Orion XC System is the result of Rose Electronics' commitment to providing continued state-of-the-art switching solutions for today's demanding workplace. The Orion XC System has proven to be a valuable investment for all types of businesses that have the need to monitor, maintain, route, switch and access information from multiple computer systems. Its use in large computer and multimedia facilities gives the IT professional the added flexibility to monitor and maintain all systems, running on different platforms, from one or multiple KVM stations. The Orion XC System is the common sense solution that provides the flexibility and security required for today's business environment.

Rose Electronics' Orion XC System is designed to be configured to meet system demands, one user or multiple users, two computers or hundreds. All configurations offer standard features that allow for easy, secure, and complete access to as many computers as the system has, from one or multiple KVM user stations. The Orion XC unit is connected to the computers and user stations through CATx cables, single-mode fiber cables or multi-mode fiber cables. Using CATx cabling, the distance can be up to 460 feet (140m) on either side of the matrix. The distance can be to 3,280 feet (1 km) using multi-mode fiber, or 32,808 feet (10 km) using single-mode Fiber. The use of lower bulk cables makes installation easier, quicker, and less expensive.

The Orion XC comes in models, with 8, 16, 32, 48, 64 or 80 ports. The ports can be all CATx or all Fiber ports. In addition, the 64-port and 80-port models can have a mix of CATx and Fiber ports on the same unit. Each port functions independently, and can be defined and switched either as a console or CPU port.

The convenient On-Screen Display (OSD) menus are intuitive and easy to use. They guide the user through the configuration process, making it easy to configure the Orion XC.

The Orion XC is used along with extender transmitters, called CPU devices, and receivers, called CON devices. The CPU devices connect to the computer or video source, and the CON devices connect to the DVI or VGA monitor, USB keyboard and USB mouse. The CPU and CON devices connect to the Orion XC using CATx or Fiber cables. The CPU and CON device models vary depending on the device support required.

The reliability, security, and versatility of the Orion XC System streamlines any data center or server room by simplifying maintenance, access, and updating.

About This Manual

This manual covers the installation, configuration, and operation of the Orion XC System. The System consists of three components; the Orion XC switch, the CPU device(s), and the CON device(s). This manual only covers the Orion XC switch. The Installation section explains how the three components are interconnected to form a seamless switching network. The Operations section describes how to operate the system and the features available to make switching and maintenance simple and easy.

Features

- Comes in several models, each with different numbers of ports:
  - 8-port
  - 16-port
  - 32-port
  - 48-port
  - 64-port
  - 80-port
- Ports can be all CATx, all Fiber, or with the two largest models, mixed CATx and Fiber
- Extend KVM stations and computers up to 460 feet (140m) on either side of the matrix through CATx cable, up to 3,280 feet (1 km) using multi-mode fiber, or 32,808 feet (10 km) using single-mode fiber
- Supports resolutions up to 1920 x 1200 @ 60Hz and all DVI Single-Link resolutions including High-definition 1080p or 2K
- Intuitive OSD for easy use and configuration at each user station
- Each port on the Orion XC will automatically be configured as an input or output depending on the type of device that is connected. If a CPU device is connected, the port becomes an input. If a CON device is connected, the port becomes an output.
- Switch video sources of the same resolution instantly with no delay or display blanking
- Can handle mixed signals including:
  - DVI or VGA inputs
  - Transparent USB 2.0
  - USB HID
  - PS/2
  - Serial
  - Analog or Digital audio
- Redundant, load sharing power supplies in all models except 8 port; redundant power option in the 8 port model
- Rack-mountable – 8-port, 16-port, 32-port and 48-port models are 1U size; 64-port and 80-port models are 2U size.
- Five optional firmware bundles are available for extra functionality:
  - Extended Switching and Presets added to the Java Tool
  - Extended Switching and Presets added to the Java Tool and additional API
  - SNMP and Syslog for unit monitoring
  - Matrix Grid
  - Multi-Screen Control

Compatibility

Video	DVI-I (VGA or DVI) input, DVI-D Single Link output; Maximum Resolution: 1920 x 1200 @ 60 Hz / 24-bit
Keyboard	Compatible with all standard PS/2 and USB keyboards
Mouse	Compatible with all standard PS/2 and USB 2-button, 3-button and wheel mice
USB 2.0	Supports signals from USB 2.0 devices, such as printers and flash drives
Audio	Compatible with analog and digital audio devices
Serial	Accepts RS-232 serial control communication
Interconnect	CATx cable allows a maximum distance of 460 ft (140 m) on either side of the switch Single-mode fiber cable allows up to 3,280 feet (1 km) on either side of the switch Multi-mode fiber cable allows up to 32,808 feet (10 km) on either side of the switch

Package contents

- Orion XC unit as ordered
- Rack mount kit (with screws)
- 1 x power cord for each of the two built-in power supply units
- 1 x serial control cable
- 1 x RJ45/RS232 adapter
- 1 x CATx network cable (crossover)
- Java Tool
- Manual

System Overview

An Orion XC matrix system consists of an Orion XC matrix, one or more CPU Units, and one or more CON Units. The Orion XC matrix is connected to the CPU Units / CON Units by CATx or fiber interconnect cables.

The CPU units are connected to the computers' video, keyboard and mouse ports using standard video and USB or PS/2 cables. CON Units are connected to console display, keyboard, mouse and USB peripherals.

The communication between the Orion XC matrix and the CPU Units / CON Units takes place over the interconnect cables.

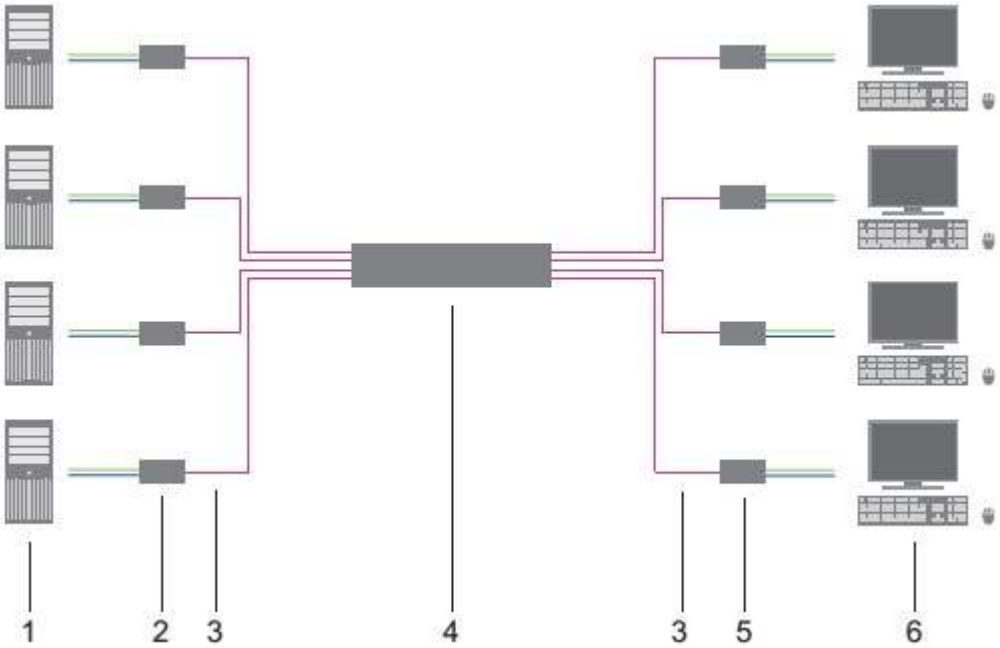

Figure 1. System Overview

1 - Source (computer, CPU)
2 - CPU Units
3 – CATx or Fiber Interconnect cables
4 - Orion XC matrix
5 - CON Units
6 - Console (monitor, keyboard, mouse)

Orion XC Model Description

The Orion XC is available in models with 8, 16, 32, 48, 64 or 80 ports. All these models are available with all CATx or all fiber ports. In addition, the 64 port and 80 port models can also have mixed CATx and Fiber ports. The following views of the Orion XC matrix illustrate the available chassis types.

Orion XC 8-Port Models

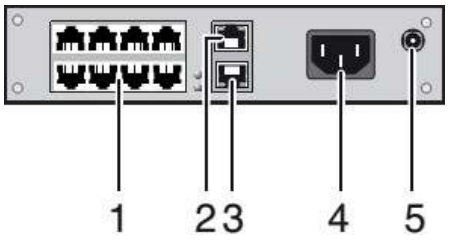

Figure 2. 8-Port Model with All CATx Ports

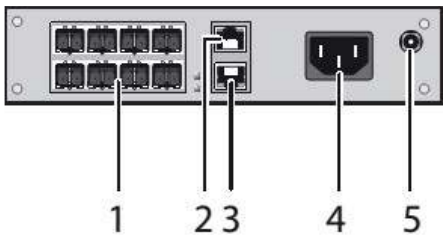

Figure 3. 8-Port Model with All Fiber Ports

1 – I/O Ports numbered 1 through 8
2 – RJ45 port for serial connection
3 – RJ45 Port for connection to a network
4 – Connect to AC Mains
5 – Connect to 5V DC Power Adapter (Optional)

Orion XC 16-Port Models

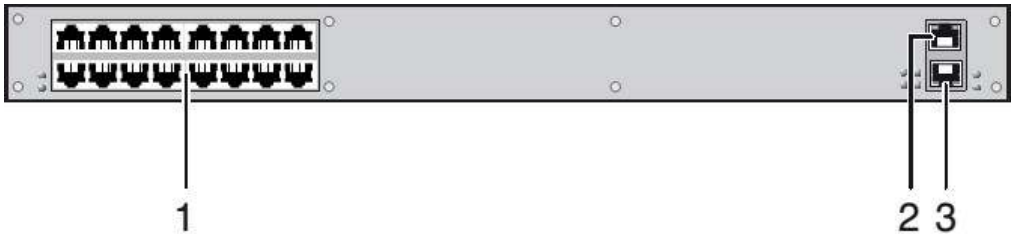

Figure 4.16-Port Model with All CATx Ports

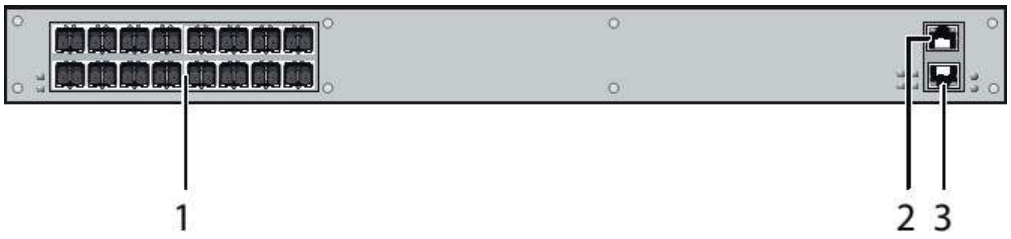

Figure 5. 16-Port Model with All Fiber Ports

1 – I/O Ports numbered 1 through 16
2 – RJ45 Port for Serial Connection
3 – RJ45 Port for connection to a network

Orion XC 32-Port Models

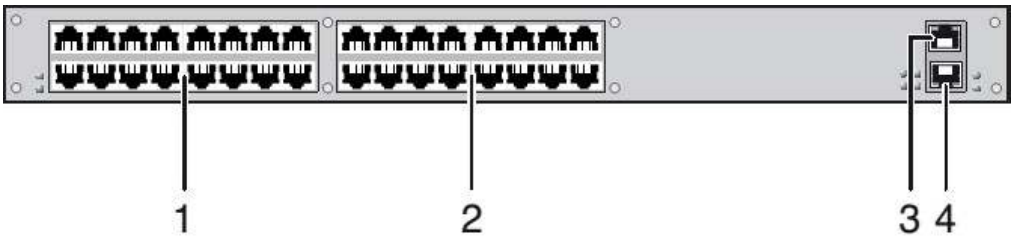

Figure 6. Orion XC 32-port Model with All CATx Ports

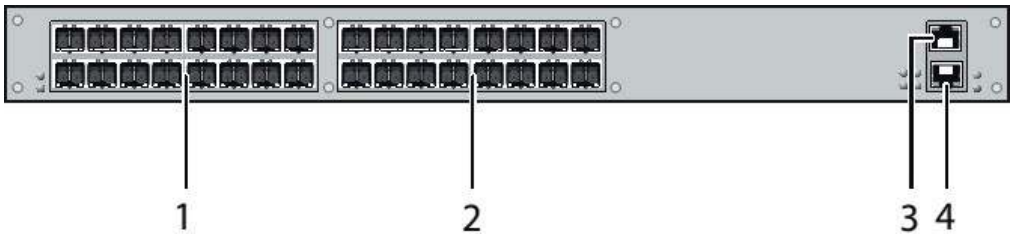

Figure 7. Orion XC 32-Port Model with All Fiber Ports

1 – I/O Ports numbered 1 through 16
2 – I/O Ports numbered 17 through 32
3 – RJ45 Port for Serial Connection
4 – RJ45 Port for connection to a network

Orion XC 48-Port Models

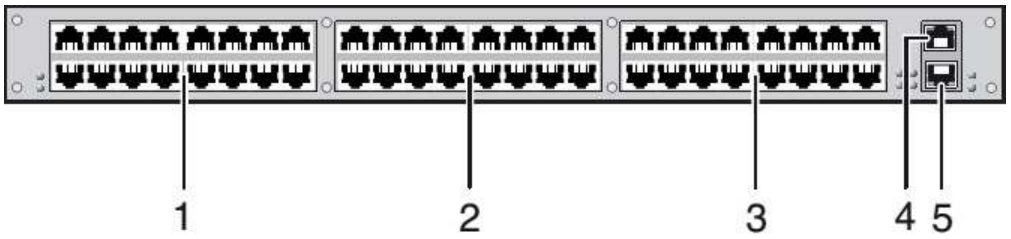

Figure 8. Orion XC 48 Port Model with All CATx Ports

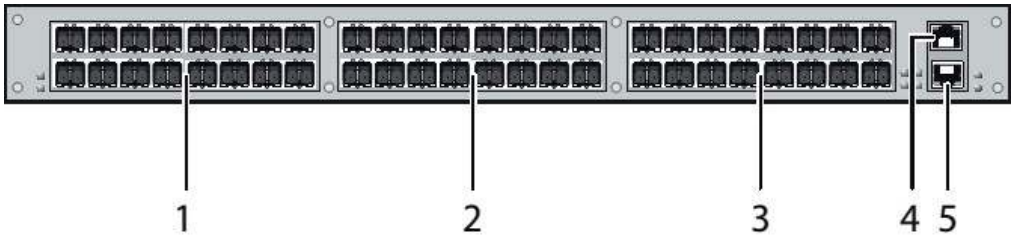

Figure 9. Orion XC 48-Port Model with All Fiber Ports

1 – I/O Ports numbered 1 through 16
2 – I/O Ports numbered 17 through 32
3 – I/O Ports numbered 32 through 48
4 – RJ45 Port for Serial Connection
5 – RJ45 Port for connection to a network

Orion XC 64-Port Models

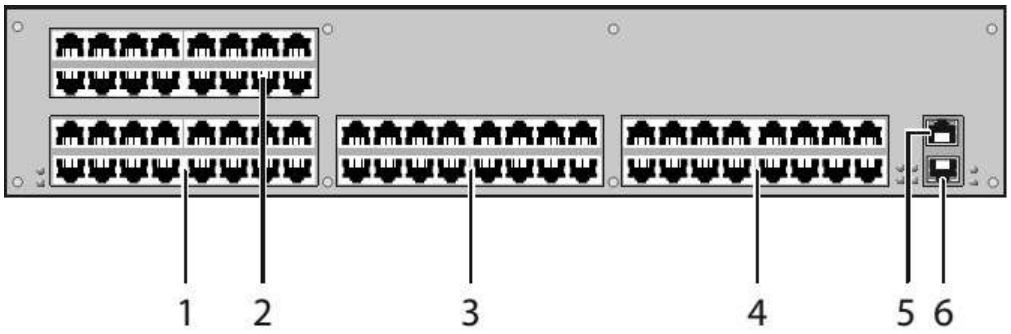

Figure 10. Orion XC 64-Port Model with All CATx Ports

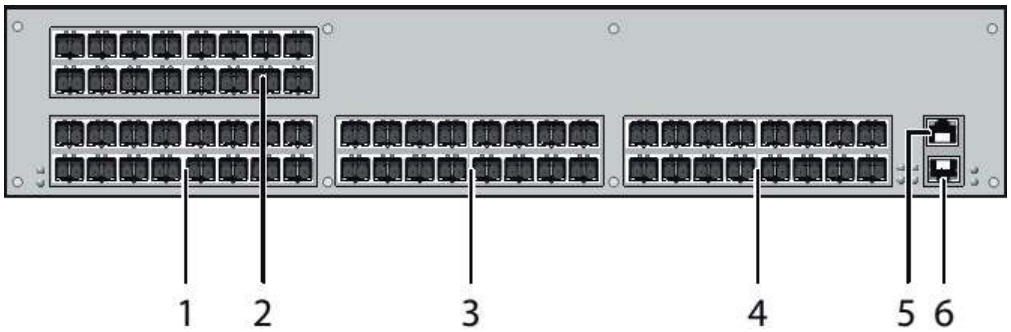

Figure 11. Orion XC 64-Port Model with All Fiber Ports

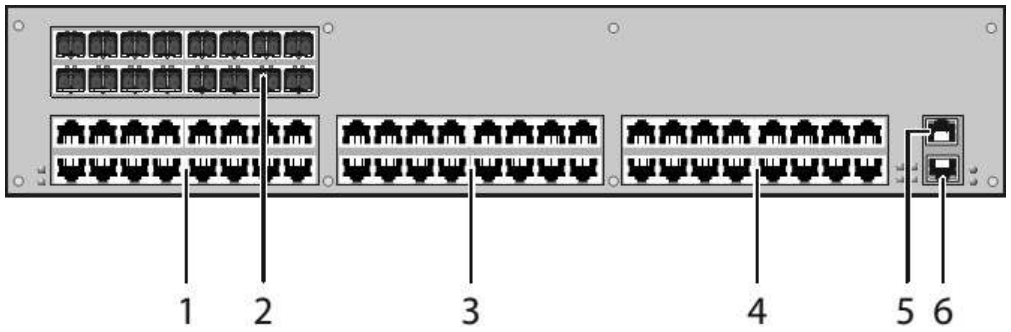

Figure 12. Orion XC 64-Port Model with 48 CATx Ports and 16 Fiber Ports

1 – I/O Ports numbered 1 through 16
2 – I/O Ports numbered 49 through 64
3 – I/O Ports numbered 17 through 32
4 – I/O Ports numbered 33 through 48
5 – RJ45 Port for Serial Connection
6 – RJ45 Port for connection to a network

Orion XC 80-Port Models

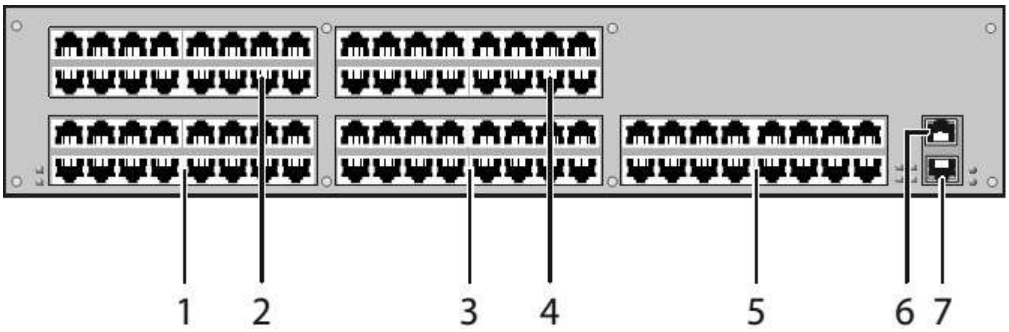

Figure 13. Orion XC 80-port Model with All CATx Ports

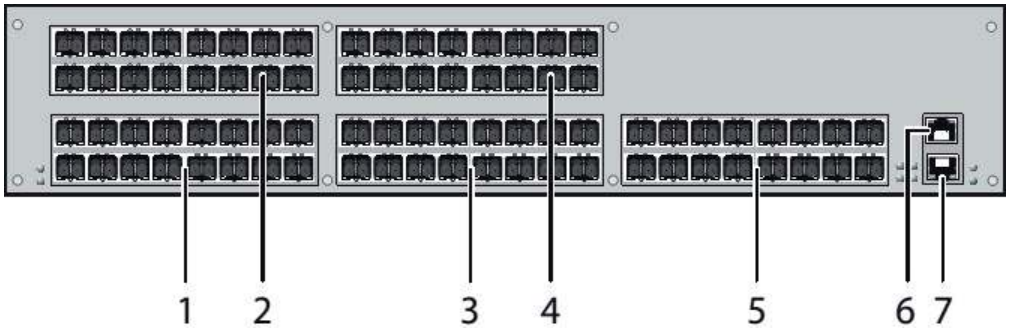

Figure 14, Orion XC 80-port Model with All Fiber Ports

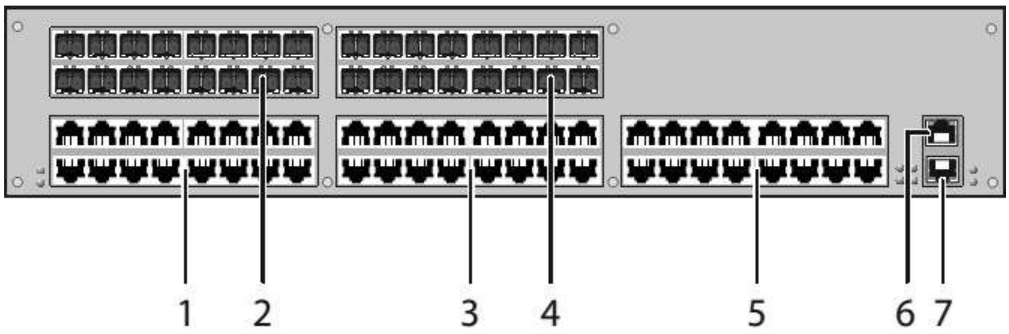

Figure 15. Orion XC 80-Port Model with 48 CATx Ports and 32 Fiber Ports

1 – I/O Ports numbered 1 through 16
2 – I/O Ports numbered 49 through 64
3 – I/O Ports numbered 17 through 32
4 – I/O Ports numbered 65 through 80
5 – I/O Ports numbered 33 through 48
6 – RJ45 Port for Serial Connection
7 – RJ45 Port for connection to a network

Installation

The installation section of this manual explains the basic System Setup. It then describes in detail how to set up the Orion XC as a KVM Matrix, how to stack Orion XC matrices or make a grid of matrices.

System Setup

First time users are recommended to first connect all of the system components in the same room as a test setup. This will facilitate correcting any cabling problems, and simplify the system configuration process.

Due to the construction of the matrix chassis, it is recommended to use an additional sub-floor below the matrix for use in a 19” rack.

Setup of the matrix

Configure the Orion XC matrix as follows.

1. Connect a CON Unit to an I/O port of the matrix.
2. Connect a keyboard, mouse and monitor to the CON unit.
3. Connect the matrix and the CON unit to their power supplies and apply power.
4. Display the OSD menu with <'Hot Key'>, <o>, select **Configuration,** and login with administrator rights.
5. Configure according to application requirements.
6. Select **Save** in the Configuration menu, and then select **Restart Matrix**.
7. Optional: Establish a network connection between the matrix and a computer running the Java tool in order to perform extended configuration.

Setup of Extenders

Configure the connected CPU and CON devices as follows.

1. Connect a CON unit to the matrix using CATx or fiber interconnect cables.
2. Connect the CON unit to the console devices (monitor, keyboard and mouse).
3. Connect the 5VDC power supply units to the CON unit and apply power.
4. Check the basic function of the CON unit by displaying the OSD menu with <'Hot Key'>, <o>.
5. Connect the source (computer, CPU) to the CPU unit of the extender by using the provided connection cables.
6. Connect the CPU unit to the matrix by using CATx or fiber interconnect cables.
7. Connect the 5VDC power supply units to the CPU units.
8. Start the system by applying power to the Matrix.

Possible Orion XC Setups

The Orion XC can be set up in a variety of ways to provide the optimum system environment.

A portion of the Orion XC can be configured for single display computers, with another portion for multi-display computers. The KVM and USB 2.0 support can also be configured.

Configuration of Orion XC can be performed through the OSD menus, using a keyboard and monitor connected to an extender CON unit. It can also be configured through a network connection with a computer running the Java Tool, or through the serial interface.

A connection to common media controls is also possible.

The following sections show the typical installations of the Orion XC.

KVM Matrix

In single-head mode, up to 80 ports can be used either as input or as output ports depending on the components and equipment. Non-blocking access is available to all users, i.e. user access is not limited by the activities of another user.

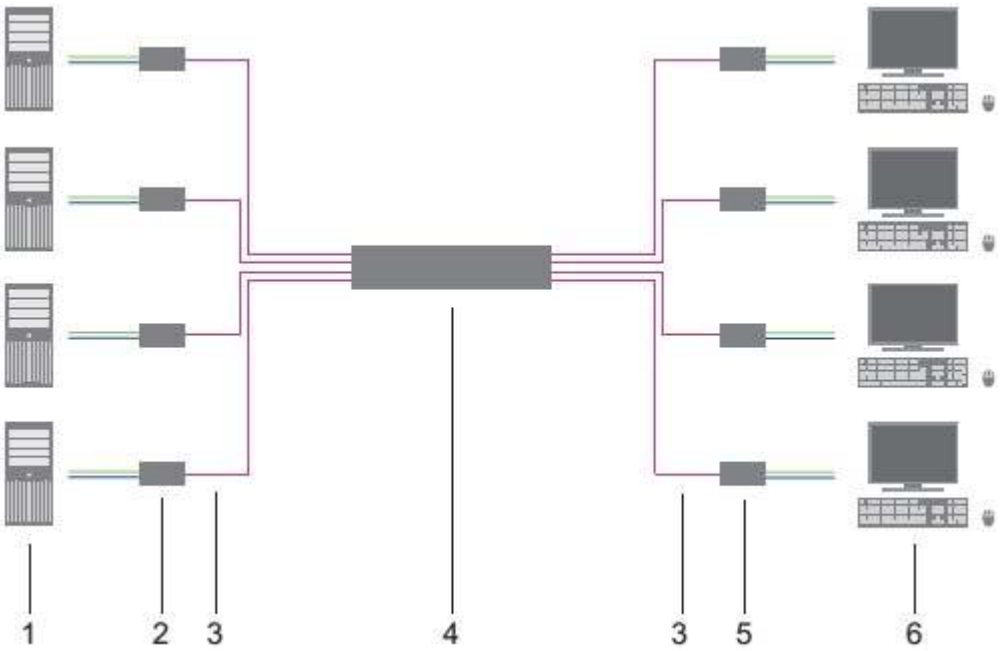

Figure 16. Single-head KVM Matrix

1 - Source (computer, CPU)
2 - CPU Units
3 - Interconnect cables
4 - Orion XC matrix
5 - CON Units
6 - Console (monitor, keyboard, mouse)

If a single-head console is used, it is also possible to access a dual-head or quad-head computer, but control is only possible at monitor 1.

Video from a single source can be switched to any number of monitors simultaneously. Audio (optional) can also be switched in the same manner.

Parallel Operation (Stacking)

For some installations, such as those with multiple monitors per workstation, or those with the need to connect USB 2.0 devices, the number of connectable CPUs and consoles can be increased by the parallel operation (stacking) of several Orion XC devices.

One of the Orion XC matrices is configured as the master matrix. All the others are configured as **Sub Matrices**, with the IP address of the master matrix entered in the **Master IP Address** field. The Sub Matrices must be connected through their chassis network connectors (RJ45) to the same network as the master matrix. The **Enable LAN Echo** option must be activated at the master matrix.

When a switching command is executed at the master matrix, the synchronized matrices will receive a network notification that the master is switching, and they will also switch, automatically.

Switching of stacked devices might be delayed by several seconds.

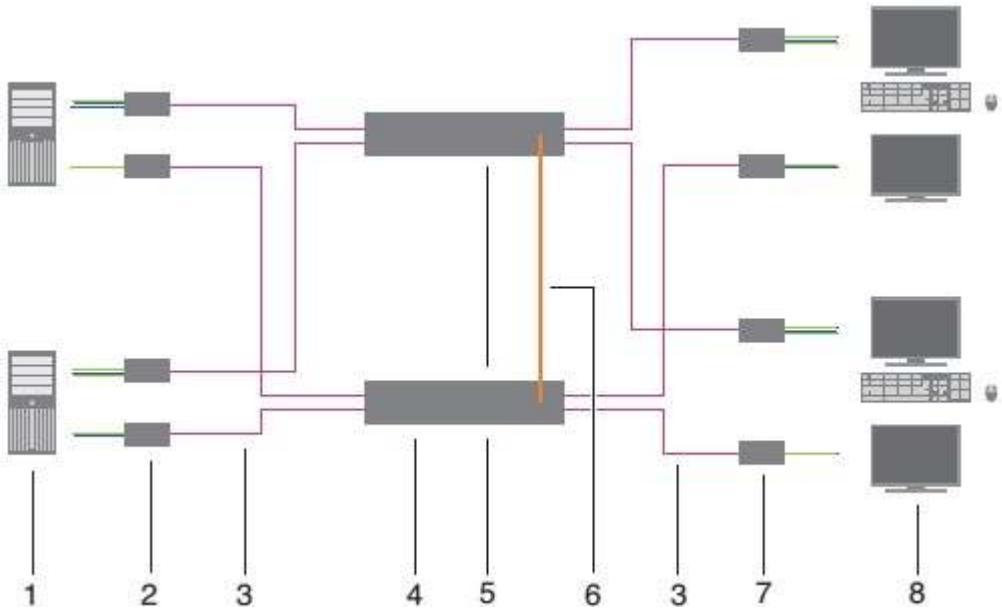

Figure 17. Parallel Operation (Stacking)

1 - Dual-Head source (computer, CPU)
2 - CPU unit
3 - Interconnect cable
4 - Master Matrix
5 - Synchronized Matrices
6 - Network connection Master / Synchronized Matrix
7 - CON unit
8 - Console (2x monitor, keyboard, mouse)

Matrix Grid

A Matrix Grid is a multiple matrix configuration which increases the total number of ports accessible beyond those in a single Orion XC. It is also useful when important connections need to be redundantly connected to several different matrix units. A Matrix Grid consists of a master matrix and at least one slave matrix. Up to 16 matrices can be interconnected in a matrix grid installation.

Orion units in a Matrix Grid are connected to each other by “Grid Lines”. The Grid Lines may connect the slave matrices directly to the master matrix or to other slave units. The Matrix Grid can be set up in several ways, such as a ring, a hub and spokes, or a fully connected configuration, depending on the where the Grid Lines are installed. Grid Line signals are bi-directional, and each can support one KVM connection.

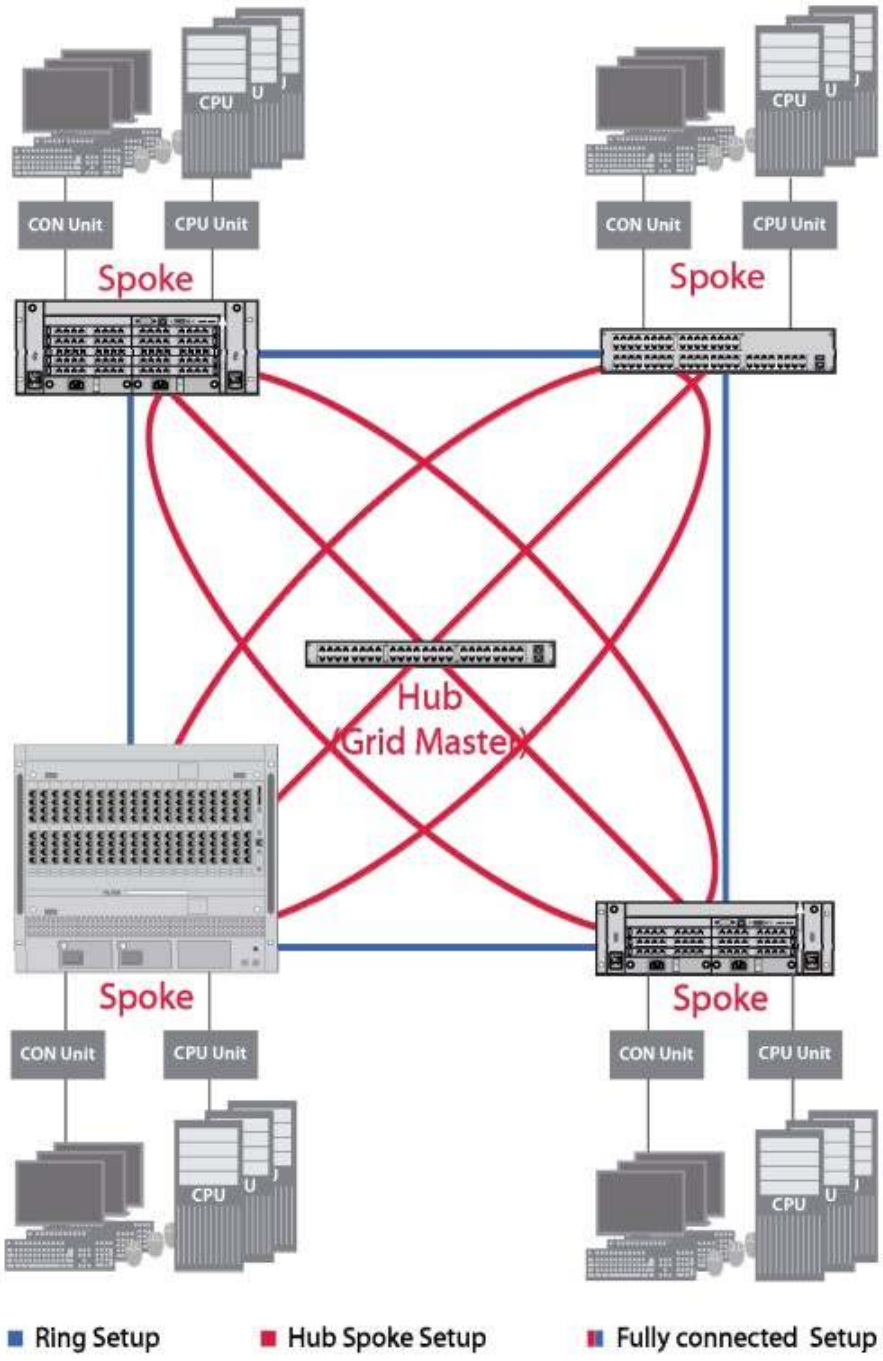

Figure 18. Matrix Grid

Configuration

The Orion XC switch is easy to configure. This can be done through keyboard commands in Command Mode, invoking the On-Screen Display, or using the Java Tool. These options are described below.

Command Mode

The Orion XC has a Command Mode that allows users to perform several functions through keyboard commands during normal use.

To enter Command Mode use a 'Hot Key' sequence, and to exit Command Mode, press <Esc>. While in Command Mode, the **Caps Lock** and **Scroll Lock** LEDs on the console keyboard will flash repeatedly.

In Command Mode, normal keyboard and mouse operation will cease. Only selected keyboard commands are available.

If no keyboard command is executed within 10 seconds after activating Command Mode, the matrix will automatically exit Command Mode.

The following table lists the keyboard commands to enter and to exit Command Mode, and to change the 'Hot Key' sequence:

Function	Keyboard Command
Enter Command Mode (default)	2x <Left Shift> (or 'Hot Key')
Exit Command Mode	<Esc>
Change 'Hot Key' sequence	<current 'Hot Key'>, <c>, <new 'Hot Key' code>, <Enter>

<Key> + <Key> Press keys simultaneously
<Key>, <Key> Press keys successively
2x <Key> Press key quickly, twice in a row (similar to a mouse double-click)

The 'Hot Key' sequence to enter Command Mode can be changed. The following table lists the 'Hot Key' Codes for the available key sequences.

'Hot Key' Code	'Hot Key'
0	Hot Key can be selected by user
2	2x <Scroll>
3	2x <Left Shift>
4	2x <Left Ctrl>
5	2x <Left Alt>
6	2x <Right Shift>
7	2x <Right Ctrl>
8	2x <Right Alt>

Set user-defined 'Hot Key'
When setting a user-defined 'Hot Key' (e.g. 2x<Space>), 'Hot Key' Code 0 is used. For example, to set <Space> as the 'Hot Key', the following keyboard sequence will be used:
<current 'Hot Key'>, <c>, <0>, <Space>, <Enter>.

Set 'Hot Key' for direct OSD access
Besides using the 'Hot Key' for standard functions, a 'Hot Key' can be set up to directly access the OSD.

To use one of the pre-defined 'Hot Key' Codes (Codes from 2 to 8) from the table above, use the following keyboard sequence:
<current 'Hot Key'>, <f>, <'Hot Key' code>, <Enter>.

To specify a user-defined 'Hot Key' like 2x<Space>, use the following keyboard sequence:
<current 'Hot Key'>, <f>, <0>, <Space>, <Enter>.

Reset 'Hot Key'
In order to set a 'Hot Key' back to the default settings of the extender, press the key combination <Right Shift>+<Del> within 5 seconds after switching on the CON unit or plugging in a keyboard.

Control Options

The Orion XC contains an internal CPU that allows control of all functions from any console without the need for an external CPU.

The following methods are available to configure and/or operate the Orion XC:

- through the OSD
- through the Java Tool
- through the serial interface

Control through the OSD

The Orion XC can be configured through the OSD (On-Screen-Display). The settings of the *Configuration* menu are described below. All other menus are described in later chapters.

Entering the OSD

1. Start Command Mode with the 'Hot Key' (default: 2x <Left Shift>).
2. Press <o> to open OSD. If the **Enable CPU Selection** option is enabled in the **Configuration** screen, a selection list for switching between available CPU Devices is displayed. In that case, press <F7> to go to the OSD main menu.

Leaving the OSD
➔ Press <Esc> in the main menu, or <Left Shift> + <Esc> from any OSD menu.
The OSD will be closed without any further changes and the currently active CPU connection will be displayed.

Menu Structure

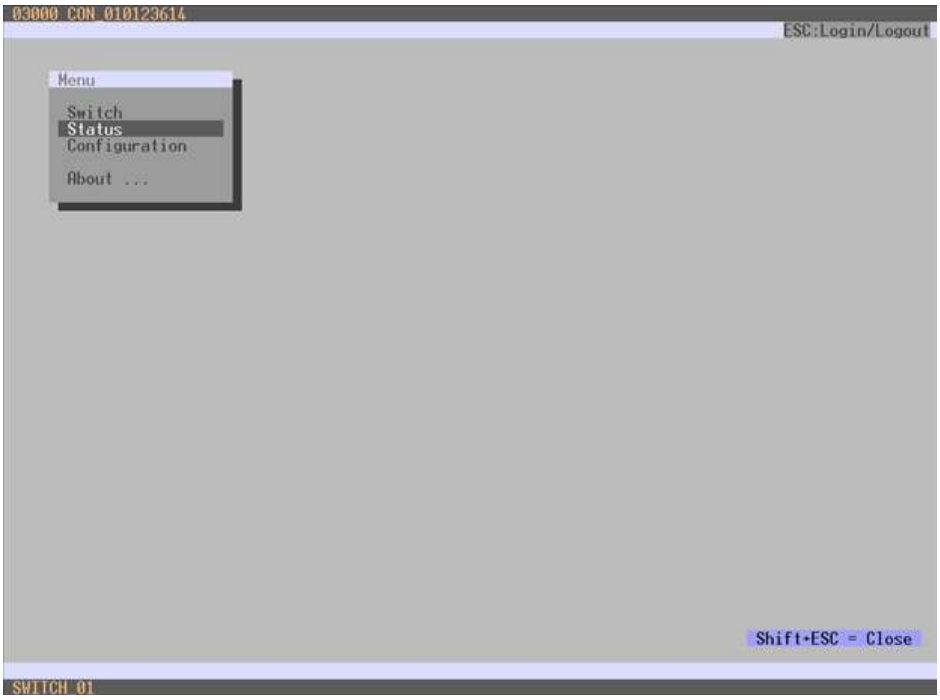

Figure 19. OSD Main Menu

The general layout of the OSD is structured into three areas:

- Upper status area (topmost two text lines)
- Working area
- Lower status area (lowest two text lines)

OSD Keyboard controls

The following keyboard commands are available.

Function	Keyboard Command
Left cursor - only within an input field or a switching screen	<Cursor Left>
Right Cursor - only within an input field or a switching screen	<Cursor Right>
▪ In input fields: Line up (with wrap around) ▪ In menus: Line up (without wrap around)	<Cursor Up>
▪ In input fields: Line down (with wrap around) ▪ In menus: Line down (without wrap around)	<Cursor Down>
Previous page in menus with more than one page	<Page Up>
Next page in menus with more than one page	<Page Down>
Next input field	<Tab>
Previous input field	<Left Shift> + <Tab>
Next option in selection fields	<+>
Previous option in selection fields	<->
Switching in selection fields between two conditions, e.g. between **ON** / **OFF** or **Y** (Yes) / **N** (No)	<Space>
▪ In menus with input fields: Save data ▪ In menus: Select menu item	<Enter>
▪ In menus with input fields: Cancel data input without saving ▪ In menus with selection fields: Go back to the previous menu level	<Esc>

Sorting and Searching Functions
When dealing with lists and tables in the OSD, keyboard commands can be used to quickly sort, search, and refresh the items displayed. The following keyboard commands are available for lists and tables:

Function	Keyboard Command
Sort by ID numbers in descending order by pressing the keyboard command once. Sort by ID numbers in ascending order by pressing the keyboard command twice (**ID**).	<F1>
Sort by ID names in descending order by pressing the keyboard command once. Sort by ID names in ascending order by pressing the keyboard command twice (**Name**).	<F2>
Go to the next result in the list of results of the search field (**Next**).	<F3>
Go to the previous result in the list of results of the search field (**Previous**).	<F4>
Refresh the currently shown list (**Refresh**).	<F5>
Jump between the search field and the list of results (**Find**).	<F6>

Password request
Access to the configuration menu requires administrator rights. User login is mandatory.

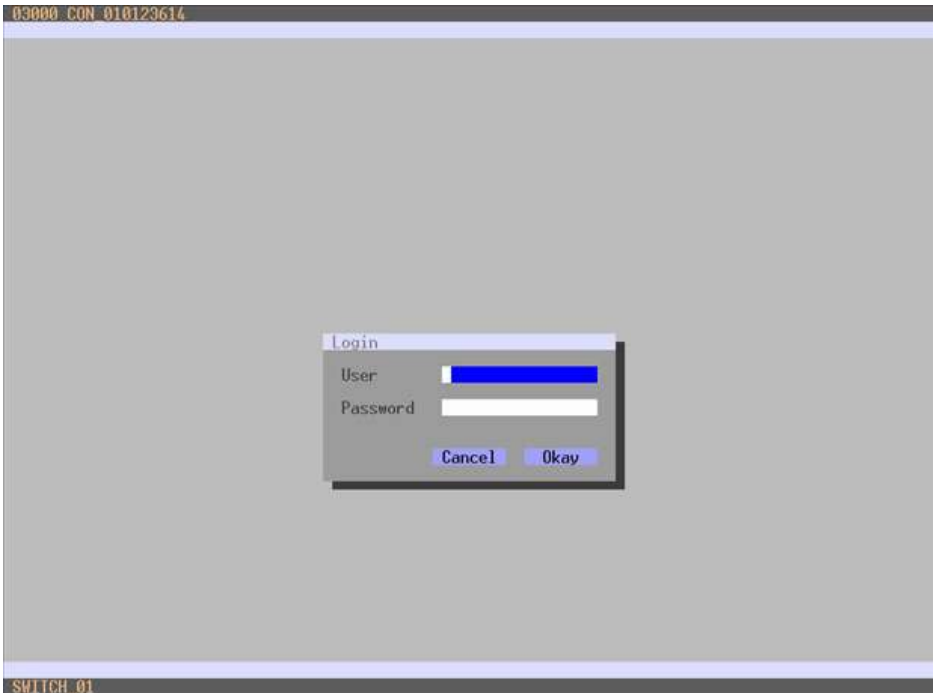

Figure 20. Login Screen

Press <F10> in the main menu to open the Login Screen. Press <F10> again to log out the user.

The default user name and password for the admin account are as follows:

Field	Default Value
User	admin
Password	admin

For security reasons, please change the administrator password as soon as possible.

Control through the Java Tool

Requirements

The following requirements have to be met to use the Java Tool:

- Computer with an installed Java Environment (JRE, version 1.6 or higher)
- Java Tool software
- Available network connection between the Java Tool and the matrix

Contact the system administrator concerning JRE and the network connection.

Installation of the Java Tool

The Java Tool is available as a single executable program file that does not require a separate installation.

➔ Copy the tool to a directory on the computer.

If the Java Tool was not provided, contact Rose Electronics.

Computer Connection to the Matrix

Use a crossover network cable for a direct connection between a computer and the matrix, or a standard CATx cable for a connection through a switch or hub.

Do not use a network connection between the Java Tool and the matrix that is primarily used to transmit audio data.

➔ Use the appropriate network cable(s) to make the desired connections between the RJ45 ports of the computer and the CPU board of the matrix.

Starting the Java Tool

➔ Open the Java Tool by double clicking the program icon or selecting the program and pressing the keyboard <Enter> key.

Connecting to the Matrix

At least FTP rights are required.

1. Open the Java Tool.
2. Select **Matrix > Connect** in the menu bar.
3. Enter the IP address of the matrix in the popup input field as set up in the network configuration of the Orion XC.
4. Enter the user name and password for the Orion XC.
5. Confirm the inputs with the **OK** button or select **Cancel** to abort login.

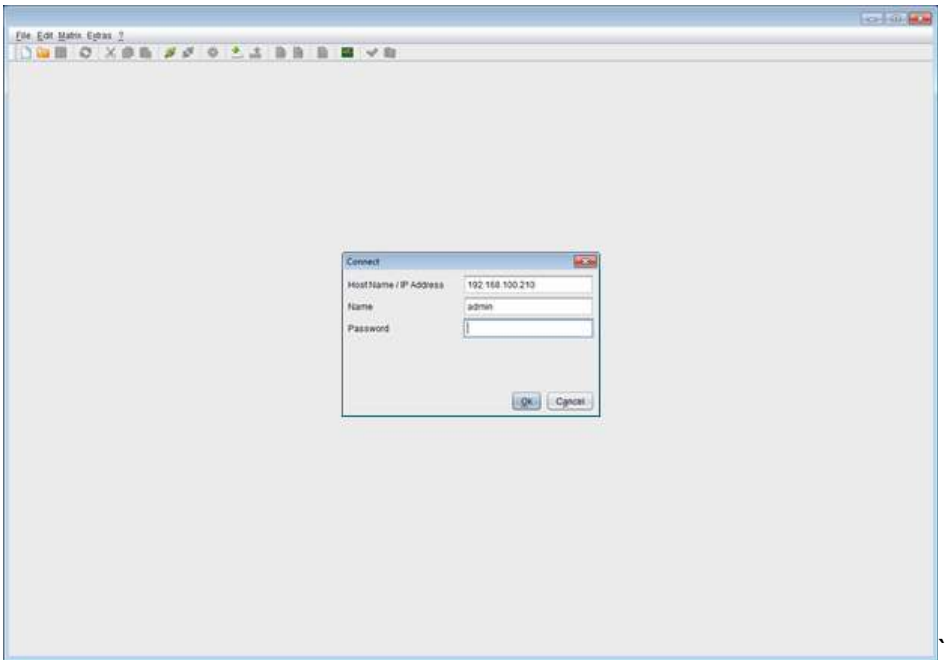

Figure 21. Java Tool Connect Screen

Up to twelve connections between the matrix and Java tool software can be established at the same time.

Java Tool Screen structure

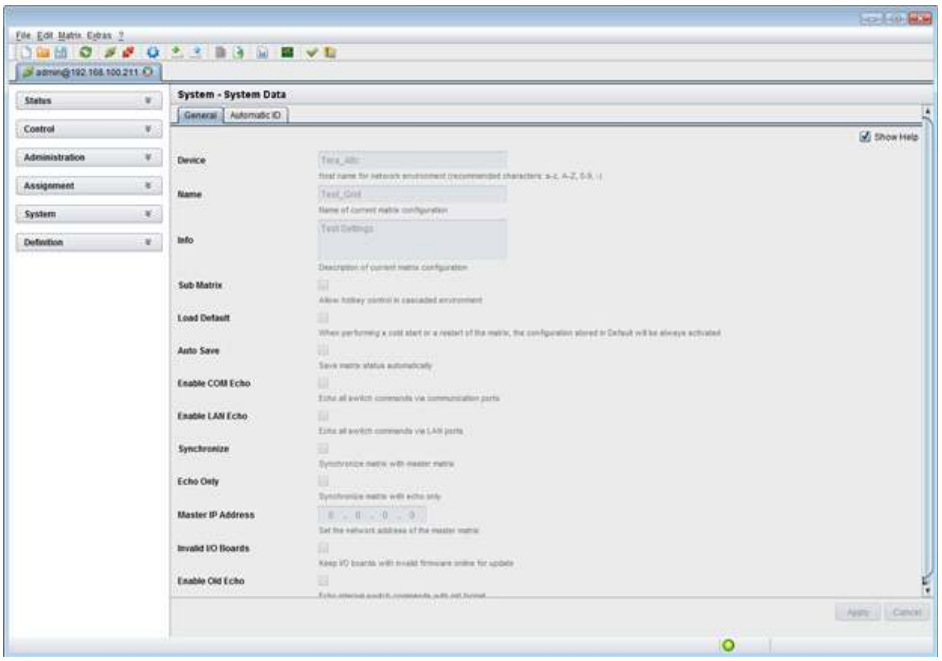

Figure 22. Java Tool System Data Screen

The Java Tool screen is subdivided into various sections:

- Menu bar (top line)
- Toolbar (second line)
- Tab bar (third line)
- Task area (left menu section)
- Working area (right menu section)
- Status bar (bottom section)

Operating Instructions

The operation of the Java Tool is intuitive, and is compatible with the user interfaces of the most commonly used operating systems.

The integrated help texts in the working area of the Java Tool can be activated or deactivated by the checkbox in the upper right corner.

Mouse Control

The following mouse commands are available

Function	Mouse Command
Menu selection, marking	Left mouse button
Open function-specific selection menus	Double click left mouse button
Open context-specific selection menus	Right mouse button

Keyboard Control

The following keyboard commands are available.

Function	Keyboard Command
Cursor to the left	<Cursor Left>
Cursor to the right	<Cursor Right>
Line up	<Cursor Up>
Line down	<Cursor Down>
Previous page in input or status menus with more than one page	<Page Up>
Next page in input or status menus with more than one page	<Page Down>
Next field in input menus	<Tab>
Previous field in input menus	<Left Shift> + <Tab>
▪ Switching in selection fields between two conditions (checkmark or not) ▪ Open already marked fields for editing or selecting	<Space>
▪ Menu item selection ▪ In menus: Data saving	<Enter>
▪ Leave tables ▪ Jump from tables into the next field	<Ctrl> + <Tab>
▪ Leave tables ▪ Jump from tables into the previous field	<Ctrl> + <Left Shift> +<Tab>

Various other functions within the menus can be executed with keyboard commands listed to the right of the respective menu item (e.g. press <Ctrl> + <S> to execute **Save**).

Reload Options
The information shown in the Java Tool can be reloaded in different ways.
- By pressing <F5> on the keyboard
- By clicking **Edit > Reload** in the menu bar
- By clicking the "Reload" symbol in the symbol bar

Context Function
The Java Tool offers several context-specific functions that support a user friendly and effective operation. The individual context specific functions are described in their respective chapters.
➔ To execute a context specific function, click the right mouse button on the corresponding field and select the desired function.

Sorting Function
Lists and tables in the Java Tool can be sorted so that they can be searched easily.
1. To sort in ascending order, click the left mouse button once on the header of the column to be sorted. The sort status is indicated by an arrow that points upwards.
2. To sort in descending order, click the left mouse button twice on the header of the column that has to be sorted. The sort is displayed by an arrow that points downwards.
3. To cancel the sort, click left mouse button once or twice on the header of the sort column until the sort direction arrow disappears.

Filter Function
Lists and tables in the Java Tool can also be filtered to display only relevant results.
1. To activate a filter, click the right mouse button on the header of the column to be filtered, and select **Set Filter**.
2. Enter the word or part of a word to be used as a filter into the header. The filter results are shown immediately.
3. To delete a filter, click the right mouse button on the header of the filter column, and select **Clear Filter**.

An active filter is indicated by an asterisk in the header. The filter function is similar to that used in common web search engines.

Offline Configuration
Configuration and system settings can be changed via the Java Tool in offline mode when a direct connection between the tool and Orion XC is not available.

To upload a configuration to the matrix, proceed as follows:
1. Select **File > Upload** in the menu bar.
2. Enter the IP address of the matrix, the name and password of the authorized user, and then click the **Next** button.
3. Select the storage location of the new configuration (**default,** or **config01 - config08**) in the **Select** C**onfiguration** screen.
4. If the configuration is to be activated as well as uploaded, click on the **Activate** check box
5. Click the **Finish** button.

During the activation of a configuration, the matrix is temporarily unavailable.

Online Configuration
Configurations and system settings can be also edited when the Java tool is in online mode with an active connection between matrix and Java tool.

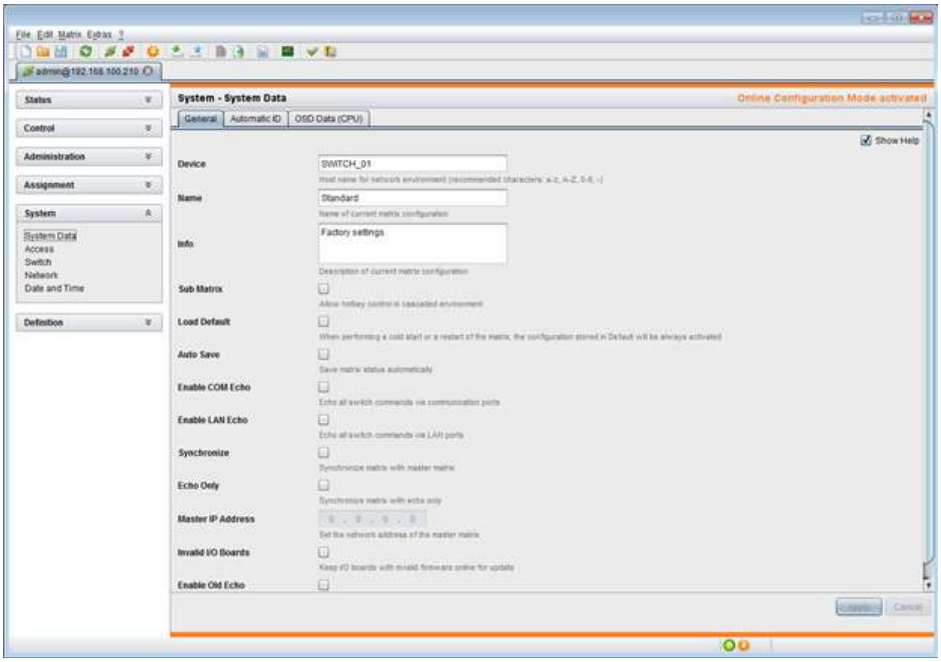

Figure 23. Java Tool Online Configuration

To edit a configuration in online mode, proceed as follows:

1. Select the **Matrix > Activate Online Configuration Mode** menu item. This activation of this setting will be shown in the title bar of the working area.
2. Make any edits at the configuration and system settings, and confirm by clicking on the **Apply** button. The changes will be immediately applied.
3. In order to deactivate the online mode, select the **Matrix > Deactivate Online Configuration Mode** menu item in the menu bar.

Options menu
The Java tool can be adapted and customized by changing its settings from their default values.

To activate or change the default settings, proceed as follows:
➔ Select **Extras > Options** in the menu bar. The **Default Settings** tab will open.

The following default settings can be changed:

Option	Description
IP / Hostname	Default IP address of the matrix required for connection
User	Default user name required for connection
Configuration Directory	Default directory for configuration files
Firmware Directory	Default directory for update files
Status Directory	Default directory for the firmware status
Import / Export Directory	Default directory for import and export files
Presets Directory	Default directory for macro files

To set font sizes for the Java tool, proceed as follows:

1. Select **Extras > Options** in the menu bar.
2. Open the **Font** tab.
3. Select the desired font size (**normal** or **large**).

Report
The Java tool is equipped with a report function that exports the current switching status and all relevant parts of the matrix configuration to a PDF file. The report function can be used in both online or offline mode of the Java tool.

To create a report, proceed as follows:

1. Select **File > Report...** in the menu bar. A selection assistant will be opened.
2. Select the desired information to be included in the report (**Matrix View**, **EXT Units**, **CPU Devices** and **CON Devices**) and confirm with the **Next >** button.
3. Select the preferred location for storage of the report and confirm with the **Finish** button. The report will be created as a PDF file.

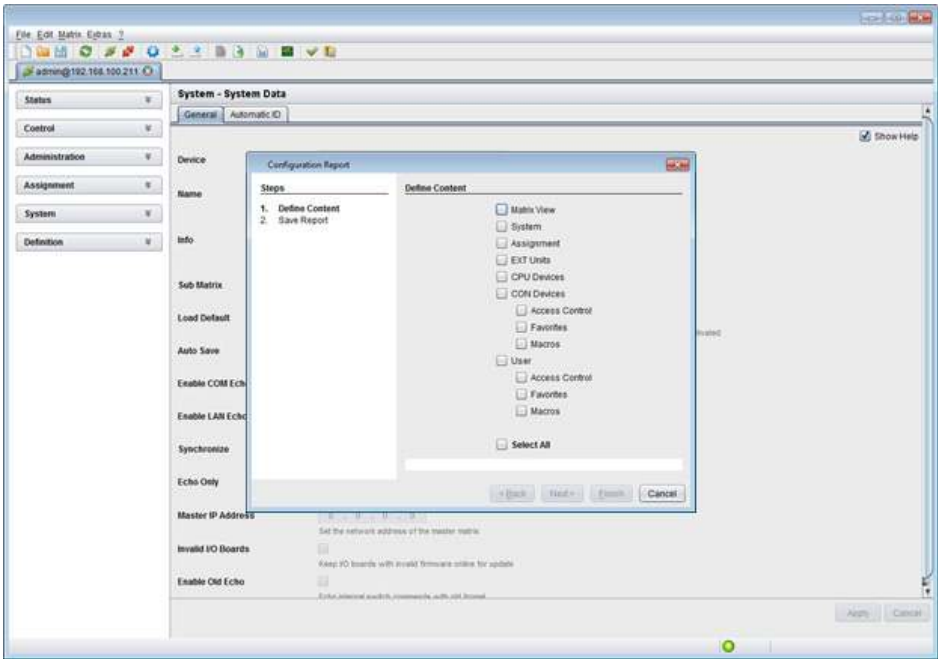

Figure 24. Java Tool Configuration Report

Control through the Serial Interface

The Orion XC operating system has a number of functions that can be controlled via serial interface. There are message packets for switching single or all available connections, both unidirectional and bidirectional. In addition, there are other messages packets for an overall definition of the total switching status and for saving and loading such switching states.

If requested, the Orion XC can provide an echo through the serial interface or network interface of all switching operations. This allows tracking of the current connection status of the matrix at any time.

In addition, matrix clones can be switched in parallel as synchronized matrices (Stacking) through the serial network interface.

Assignment

CPU specific or console specific assignments can be made on the Orion XC.

- CPU specific assignments can be made by attaching virtual CPUs to real CPUs.
- Console specific assignments can be made by attaching virtual consoles to real consoles.

Virtual CPU

Virtual CPUs can be assigned to real CPUs in this menu.

This simplifies the process of switching several consoles to the same CPU. If several consoles are connected to a virtual CPU, which is then assigned to a real CPU, the real CPU needs to be changed just once, and all consoles will receive the video signal of the new CPU.

This can be done through the OSD or the Java Tool.

Assignment through the OSD

➔ Select **Assignments > Virtual CPU devices** in the main menu.

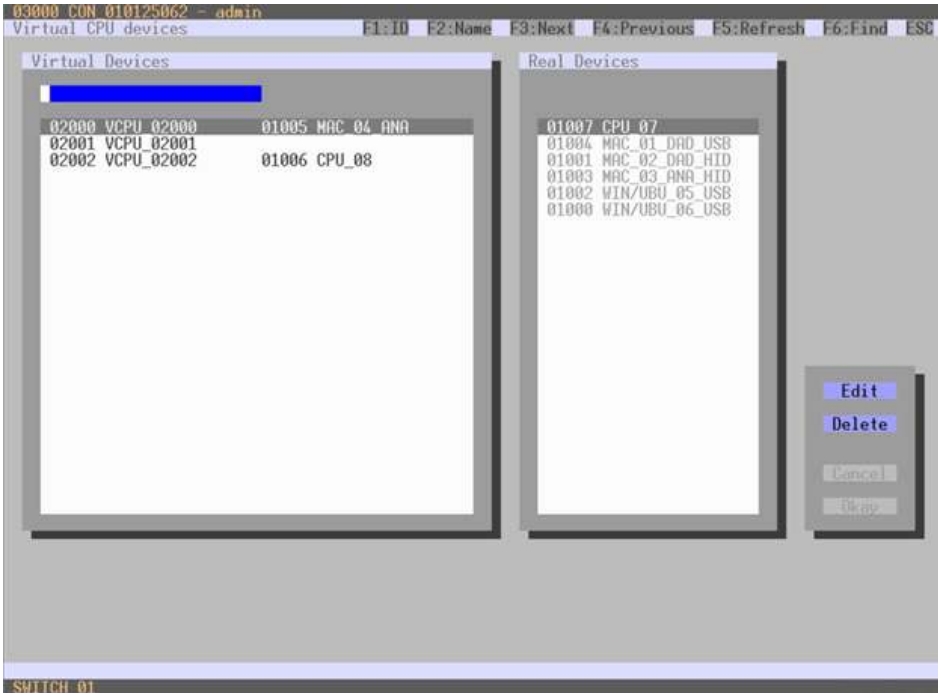

Figure 25. Virtual CPU Devices Assignment through the OSD

To make an assignment, proceed as follows:

1. Select the virtual CPU in the **Virtual Devices** list that is to be assigned to a real CPU.
2. Press the **Edit** button.
3. Select the CPU in the **Real Devices** list that is to be assigned to the selected virtual CPU.
4. Press the **Okay** button to confirm the assignment.

Only one virtual CPU can be assigned to a real CPU.

Assignment through Java Tool

➔ Select **Assignment > Virtual CPU Devices** in the task area.

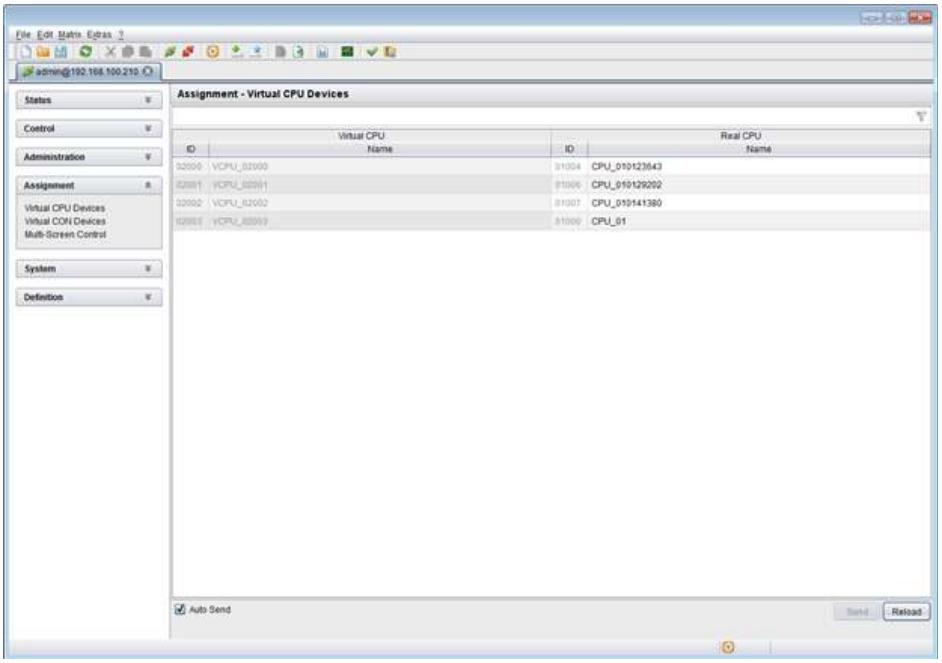

Figure 26. Virtual CPU Devices Assignment through Java Tool

To make an assignment, proceed as follows:

1. Select a virtual CPU in the **Virtual CPU** list.
2. Double click in the **Real CPU** column to get a list of all available real CPUs.
3. Select a real CPU.

Select between the following buttons:

Button	Function
Send	Send assignments to the matrix
Reload	Reload changes

When the **Auto Send** function in the left lower corner of the working area is ticked, switching operations will be performed immediately, without confirmation from a press of the **Send** button.

The selection boxes in the **Real CPU** column contain a filter function for an easy selection of single CPUs from a larger group of CPUs.

The Java tool additionally offers the option to switch directly from the **Assignment** menu to the **Definition** menu to check specific settings for the respective CPU.

➔ Use the right mouse button to select the desired CPU, and select **Open CPU Device**.

Virtual Console

Real consoles can be assigned to virtual consoles in this menu.

This simplifies the process of setting and changing access permissions, by changing the permissions of the virtual console and then applying them to all real consoles assigned to the virtual console.

Virtual consoles can be switched in exactly the same way as real consoles. If a virtual console is switched to a CPU, all real consoles assigned to the virtual console will receive the video signal. The last real console that is assigned to a virtual console will also have keyboard and mouse control.

This can be done through the OSD or the Java Tool.

Assignment through the OSD

➔ Select **Assignments > Virtual CON devices** in the main menu.

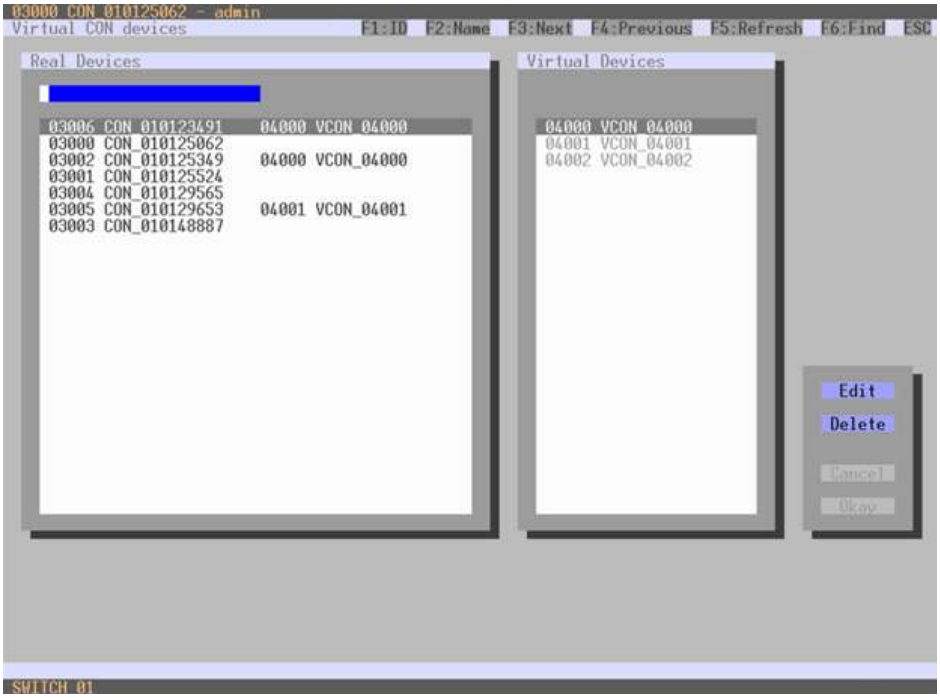

Figure 27. Virtual CON Devices Assignment through the OSD

To make an assignment, proceed as follows:

1. Select the real console in the **Real Devices** list that is to be assigned to a virtual CPU.
2. Press the **Edit** button.
3. Select the virtual console in the **Virtual Devices** list that is to be assigned to the selected real console.
4. Press the **Okay** button to confirm the assignment.

A virtual console can be assigned to more than one real console.

Assignment through Java Tool

➔ Select **Assignment > Virtual CON Devices** in the task area.

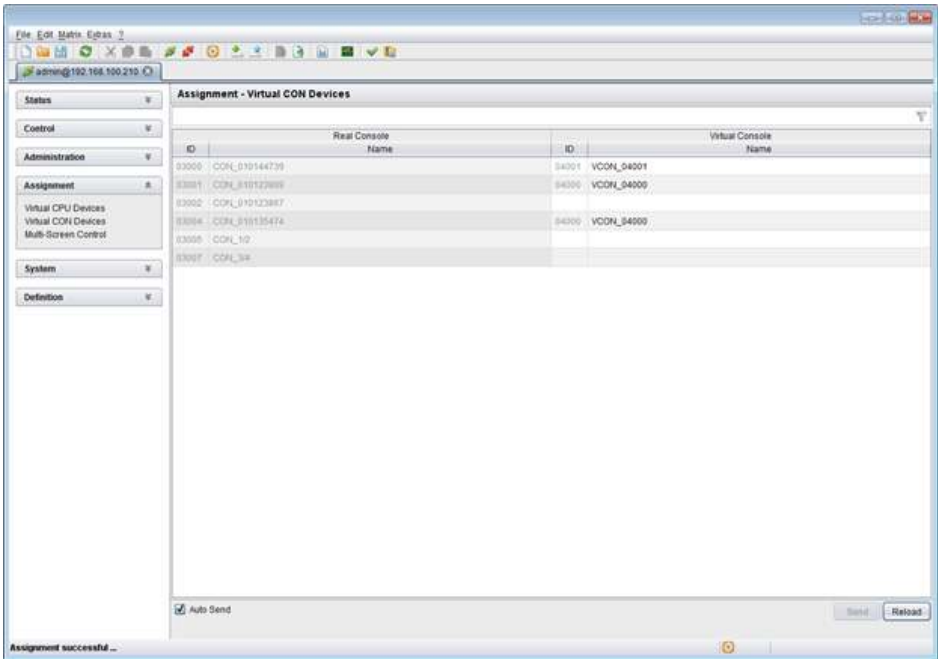

Figure 28. Virtual to Real Console Assignment through Java Tool

To make an assignment, proceed as follows:

1. Select the desired real console in the **Real Console** table.
2. Double click in the **Virtual Console** column to get a list of all available virtual consoles.
3. Select the desired virtual console.

Select between the following buttons:

Button	Function
Send	Send assignments to the matrix
Reload	Reload changes

When the **Auto Send** function in the left lower corner of the working area is ticked, switching operations will be done immediately without confirmation by pressing the **Send** button.

The selection boxes in the **Virtual Console** column contain a filter function for an easy selection of single consoles from a larger pool of consoles.

System Settings

Several system settings can be set up and modified on the Orion XC. The configuration of the system settings can only be done by users with administrator rights.

System Data

The system configuration is set up here. This can be done through either the OSD or the Java Tool.

The following settings can be modified.

Field	Selection	Description
Device	Text	Enter the device name of the matrix (default: SWITCH_01)
Name	Text	Enter the name of the configuration that is used to save the current settings (default: Standard)
Info	Text	Additional text field to describe the configuration (default: Factory settings)
Sub Matrix	Activated	When Sub matrix is activated through the OSD, control of the OSD is automatically lost. Control can be recovered by re-opening the OSD, using the keyboard command for Sub matrix OSD: <hot key>, <s>, <o>.
	Deactivated	Function not active (default)
Load Default	Activated	Loads the matrix with the default configuration after a restart or when powered on.
	Deactivated	Loads the matrix with the last saved configuration after a restart or when powered on (default)
Auto Save	Activated	Save the current configuration of the matrix to flash memory every 10 minutes. **Note:** During saving of the configuration, the matrix will not be operational. Saving occurs if changes have been made to the configuration, or switching operations have been executed since the last save.
	Deactivated	Function not active (default)
Enable COM Echo	Activated	Echo all switching commands in the matrix through the serial interface. **Note:** This function should be enabled when using a media controller through the serial interface.
	Deactivated	Function not active (default)
Enable LAN Echo	Activated	Echo all switching commands in the matrix through the LAN connection. **Note:** This function should be enabled when using a media controller via LAN connection; and on the Master matrix, when using stacking with two or more matrices.
	Deactivated	Function not active (default)
Synchronize	Activated	Synchronize the slave matrix according to the switch status of the master matrix.
	Deactivated	Function not active (default)
Echo Only	Activated	Synchronize the matrix based on the echo of a second matrix. **Note**: This is a bidirectional synchronization where both matrices have to be configured as **Synchronize** with the **Master IP** of the respective other matrix.
	Deactivated	Function not active (default)
Master IP Address	Numerical value	Set the network address of the master matrix (default value: 000.000.000.000)

Field	Selection	Description
Invalid IO-Boards	Activated	Keep I/O boards with incorrect or invalid firmware online in the matrix.
	Deactivated	Shut down I/O boards with incorrect or invalid firmware automatically (default).
Hor. Mouse Speed 1/x	1-9	Adjustment of the horizontal mouse speed, 1 = slow, 9 = fast (default value: 4)
Ver. Mouse Speed 1/x	1-9	Adjustment of the vertical mouse speed, 1 = slow, 9 = fast (default value: 5)
Double Click Time	100-800	Specify the maximum time interval between 2 mouse clicks that will be recognized as a double click (default value: 200 ms)
Keyboard layout	Region	Set the OSD keyboard layout based on the used keyboard

Modifying System Data through the OSD

➔ Select **Configuration > System** in the main menu.

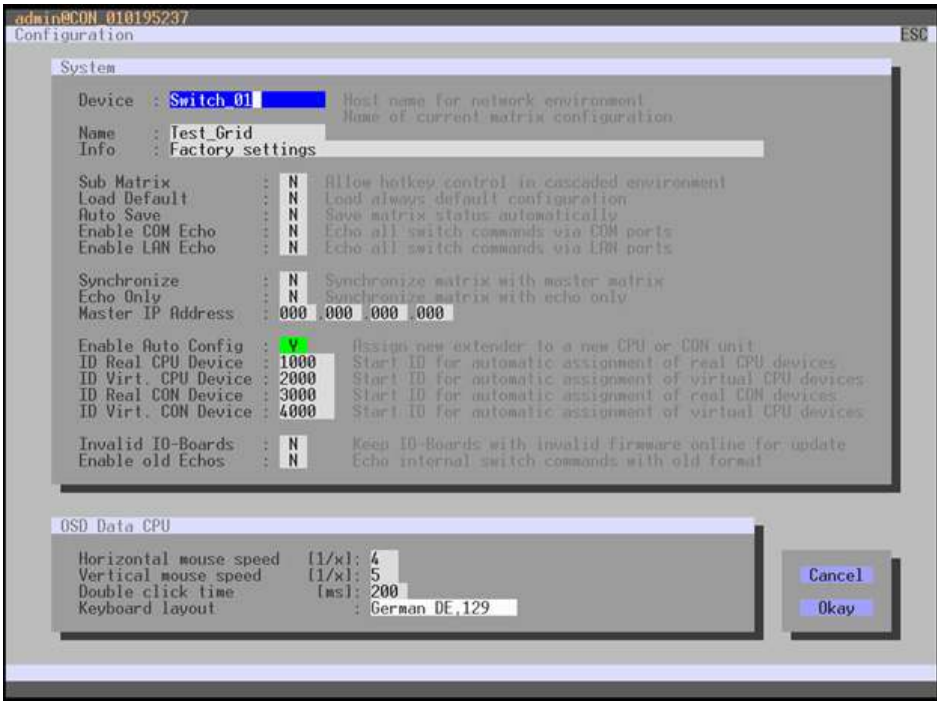
admin@CON 010195237
Configuration
ESC
System
Device : Switch_01
Host name for network environment
Name : Test_Grid
Name of current matrix configuration
Info : Factory settings
Sub Matrix : N
Allow hotkey control in cascaded environment
Load Default : N
Load always default configuration
Auto Save : N
Save matrix status automatically
Enable COM Echo : N
Echo all switch commands via COM ports
Enable LAN Echo : N
Echo all switch commands via LAN ports
Synchronize : N
Synchronize matrix with master matrix
Echo Only : N
Synchronize matrix with echo only
Master IP Address : 000 .000 .000 .000
Enable Auto Config : Y
Assign new extender to a new CPU or CON unit
ID Real CPU Device : 1000
Start ID for automatic assignment of real CPU devices
ID Virt. CPU Device : 2000
Start ID for automatic assignment of virtual CPU devices
ID Real CON Device : 3000
Start ID for automatic assignment of real CON devices
ID Virt. CON Device : 4000
Start ID for automatic assignment of virtual CPU devices
Invalid IO-Boards : N
Keep IO-Boards with invalid firmware online for update
Enable old Echos : N
Echo internal switch commands with old format
OSD Data CPU
Horizontal mouse speed [1/x]: 4
Vertical mouse speed [1/x]: 5
Double click time [ms]: 200
Keyboard layout : German DE,129
Cancel
Okay

Figure 29. Modifying System Settings through the OSD

Any changes made must be confirmed or rejected by selecting between the following buttons:

Button	Function
Cancel	Reject changes
Okay	Save changes

Modifying System Data through the Java Tool
➔ Select the **General** tab in **System > System Data**.

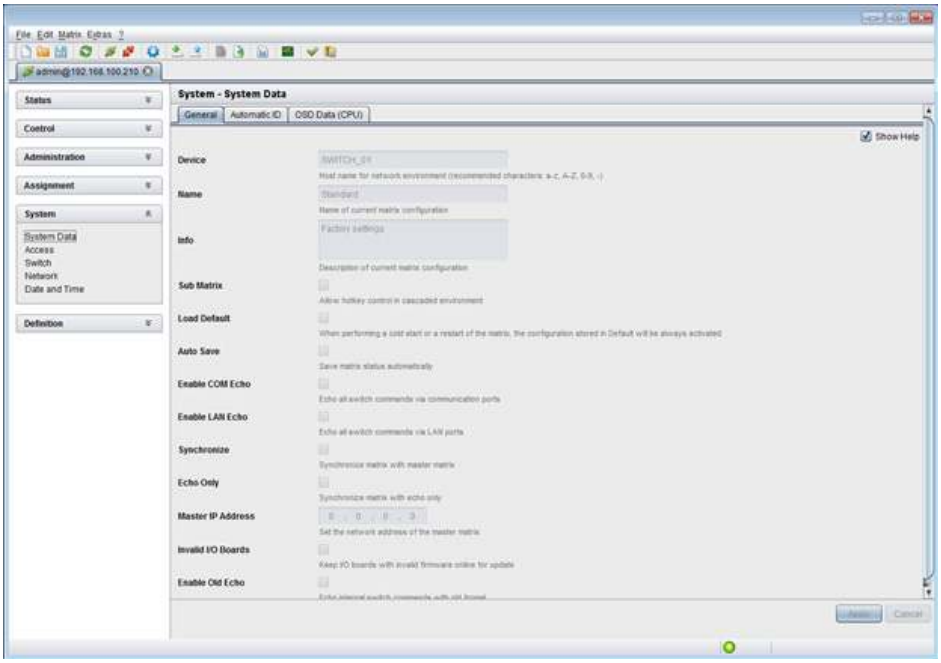

Figure 30. Modifying System Settings through the Java Tool

Automatic ID

The settings for automatic creation of CPU and CON devices when a new extender unit is connected are handled in this menu. It can be accessed in the OSD and the Java Tool.

The following settings can be modified.

Field	Selection	Description
Enable Auto Config	Activated	Automatic creation of a new CPU or CON device when new extender units are connected (default)
	Deactivated	Function not active
ID Real CPU Device	Numerical value	Initial value of the automatic ID for real CPUs (default value: 1000)
ID Virtual CPU Device	Numerical value	Initial value of the automatic ID for virtual CPUs (default value: 2000)
ID Real CON Device	Numerical value	Initial value of the automatic ID for real CONs (default value: 3000)
ID Virtual CON Device	Numerical value	Initial value of the automatic ID for virtual CONs (default value: 4000)

Modifying Automatic ID Settings through the OSD
➔ Select **Configuration > System** in the main menu.

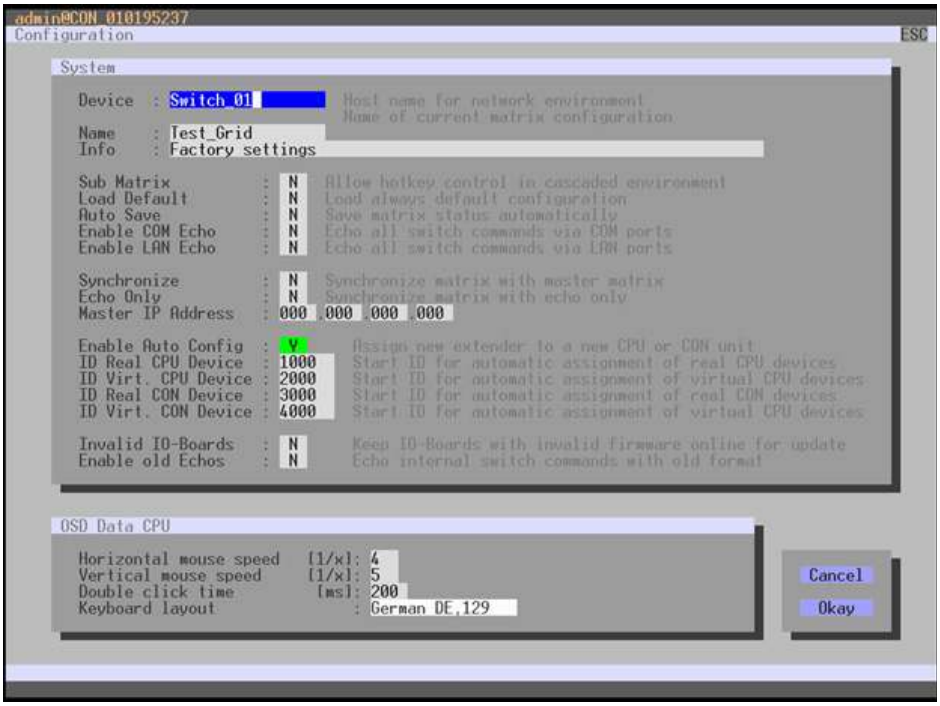
admin@CON_010195237
Configuration
ESC
System
Device : Switch_01
Host name for network environment
Name of current matrix configuration
Name : Test_Grid
Info : Factory settings
Sub Matrix : N
Allow hotkey control in cascaded environment
Load Default : N
Load always default configuration
Auto Save : N
Save matrix status automatically
Enable COM Echo : N
Echo all switch commands via COM ports
Enable LAN Echo : N
Echo all switch commands via LAN ports
Synchronize : N
Synchronize matrix with master matrix
Echo Only : N
Synchronize matrix with echo only
Master IP Address : 000 .000 .000 .000
Enable Auto Config : Y
Assign new extender to a new CPU or CON unit
ID Real CPU Device : 1000
Start ID for automatic assignment of real CPU devices
ID Virt. CPU Device : 2000
Start ID for automatic assignment of virtual CPU devices
ID Real CON Device : 3000
Start ID for automatic assignment of real CON devices
ID Virt. CON Device : 4000
Start ID for automatic assignment of virtual CPU devices
Invalid IO-Boards : N
Keep IO-Boards with invalid firmware online for update
Enable old Echos : N
Echo internal switch commands with old format
OSD Data CPU
Horizontal mouse speed [1/x]: 4
Vertical mouse speed [1/x]: 5
Double click time [ms]: 200
Keyboard layout : German DE,129
Cancel
Okay

Figure 31, Modifying Automatic ID Settings through the OSD

Select between the following buttons:

Button	Function
Cancel	Reject changes
Okay	Save changes

Modifying Automatic ID Settings through the Java Tool
➔ Select the **Automatic ID** tab in **System > System Data**.

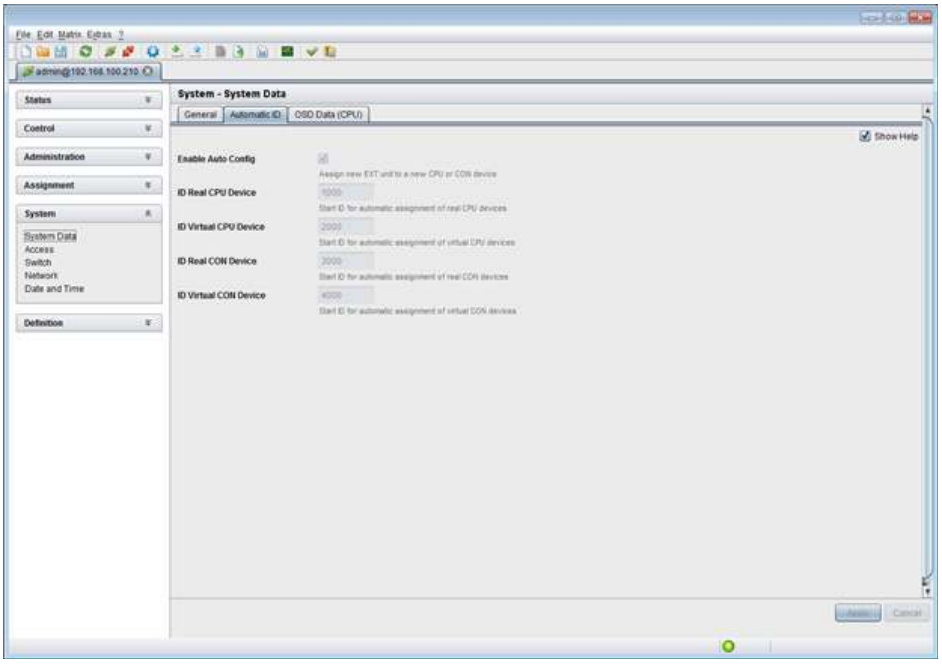

Figure 32. Modifying Automatic ID Settings through the Java Tool

Access Control

The access control configuration is set in this screen. The screen can be accessed in the OSD and the Java Tool.

The following settings can be modified.

Field	Selection	Description
Force User Login	Activated	Users must login with a user name and a password once to enter OSD. Thereafter the user remains logged in until he explicitly logs out or an auto logout is affected. **Note:** When using the **Force User Login** function, console favorites and console macros remain active.
	Deactivated	Function not active (default)
Enable User ACL	Activated	CPU access is restricted according to the permissions in the User ACL (Access Control List). ■ User login is required. ■ Switching by keyboard 'Hot Keys' requires a prior login.
	Deactivated	Function not active (default)
Enable Console ACL	Activated	CPU access is restricted according to the permissions in the respective Console ACL (Access Control List). No login required.
	Deactivated	Function not active (default)
Enable new User	Activated	Newly created users automatically receive access to all CPUs.
	Deactivated	Function not active (default)
Enable new CON	Activated	Newly created CON devices automatically receive access to all CPUs.
	Deactivated	Function not active (default)
Auto Disconnect	Activated	The console will be automatically disconnected from any current CPU connection when the OSD is opened.
	Deactivated	Function not active (default)
OSD Timeout	0-999 seconds	Period of inactivity after which OSD will be closed automatically. ■ Select 0 seconds, for no timeout (default: 0 seconds)
Auto Logout	0-999 minutes	Period of inactivity of a logged-in user at a console after which the user will be automatically logged out. The user's current connection may be disconnected as a result of the logout, depending on the defined rights in the User and Console ACL. ■ Select 0 minutes to disable inactivity logout. ■ Using the setting -1 allows the user to remain logged in until a manual logout is executed. ■ The timer is not active as long as the OSD is open. (default: 0 minutes)

Modifying Access Control through the OSD

➔ Select **Configuration > Access** in the main menu.

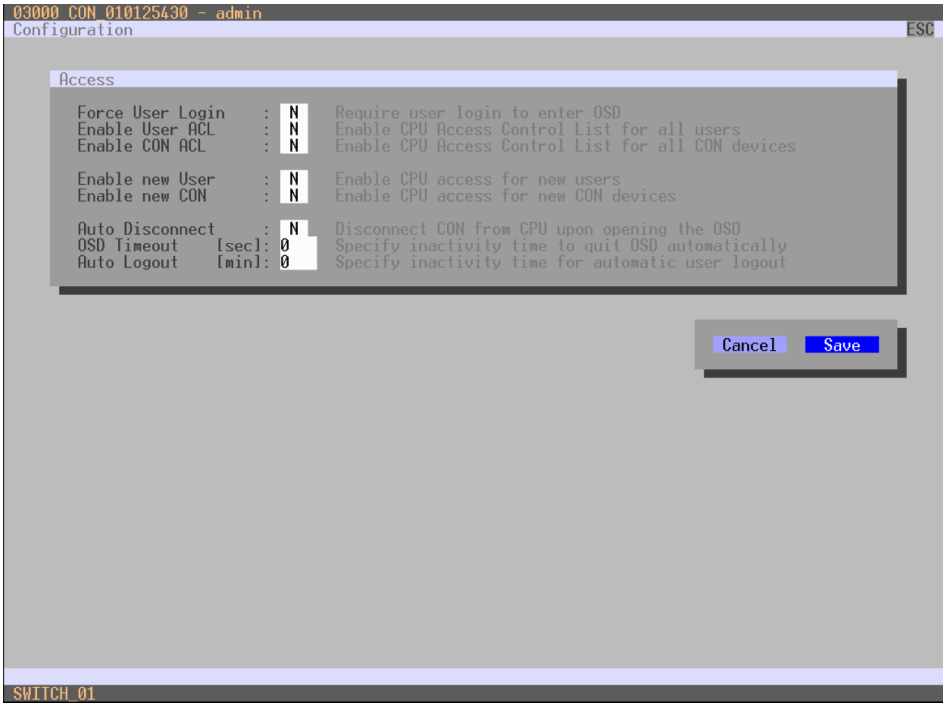
03000 CON 010125430 - admin
Configuration
ESC
Access
Force User Login : N Require user login to enter OSD
Enable User ACL : N Enable CPU Access Control List for all users
Enable CON ACL : N Enable CPU Access Control List for all CON devices
Enable new User : N Enable CPU access for new users
Enable new CON : N Enable CPU access for new CON devices
Auto Disconnect : N Disconnect CON from CPU upon opening the OSD
OSD Timeout [sec]: 0 Specify inactivity time to quit OSD automatically
Auto Logout [min]: 0 Specify inactivity time for automatic user logout
Cancel
Save
SWITCH_01

Figure 33. Modifying Access Control through the OSD

Select between the following buttons:

Button	Function
Cancel	Reject changes
Save	Save changes

Modifying Access Control through the Java Tool

➔ Select **System > Access** in the task area.

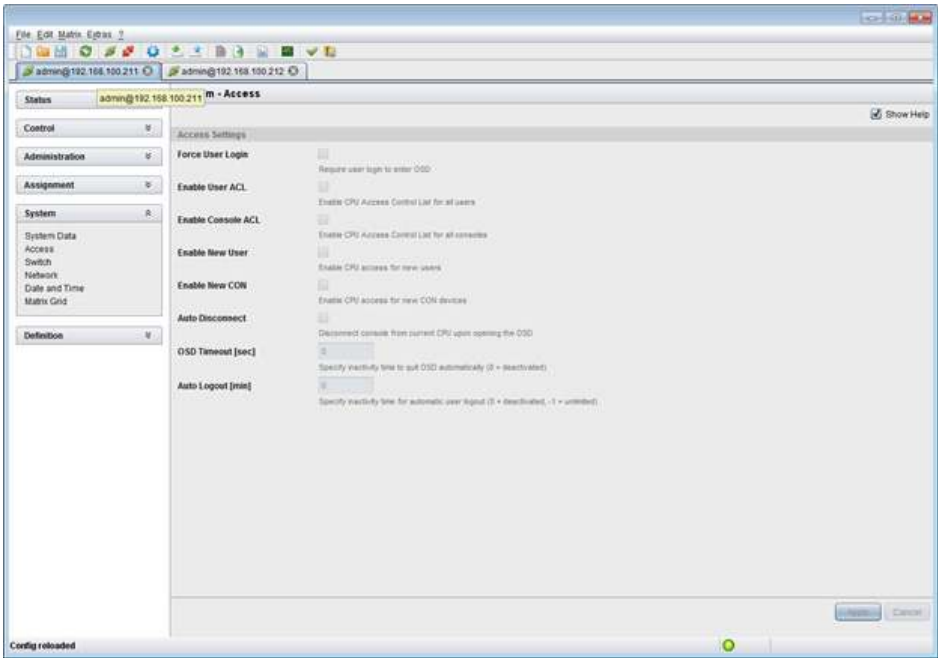

Figure 34. Modifying Access Control through the Java Tool

Switch Settings

The configuration of the switching parameters is set in this menu. This menu can be accessed in the OSD and the Java Tool.

The following settings can be modified.

Field	Selection	Description
Video Sharing	Activated	Users can switch to any CPU as an observer, even ones that already have another user connected (observers have no keyboard or mouse access). ▪ **Note:** Switching between activated and deactivated is done with the <Space> key, not <Enter>. ▪ A user with keyboard/mouse control is not notified when another user connects as an observer.
	Deactivated	Function not active (default)
Force Connect	Activated	Users can connect to any CPU as an operator, even ones to which another user is already connected. ▪ **Note:** The previous user is set to video only status. ▪ To share K/M control, **Force Connect** must be activated.
	Deactivated	Function not active (default)
Force Disconnect	Activated	An extension of **Force Connect**: When users connect to a CPU which already has another user connected, previous user will be completely disconnected. **Note:** To share K/M control **Force Disconnect** must be deactivated.
	Deactivated	Function not active (default)
CPU Auto Connect	Activated	If a console is not connected to a CPU, an automatic connection to the next available CPU can be established by hitting any key or mouse button.
	Deactivated	Function not active (default)
CPU Timeout	0-999 minutes	Period of inactivity after which a console will be automatically disconnected from its current CPU (default value: 0 minutes)
Keyboard Connect	Activated	Activate request for K/M control by keyboard event (key will be lost)
	Deactivated	Function not active (default)
Mouse Connect	Activated	Activate request for K/M control by mouse event
	Deactivated	Function not active (default)
Release Time	0-999 seconds	Period of inactivity of a connected console after which K/M control can be requested by other consoles connected to the CPU. ▪ **Note:** Set "0" for an immediate transfer in real-time. ▪ Only one console can have keyboard and mouse control at a time. The other consoles that are connected to the same CPU have a video only status (default value: 10 seconds)

If the **Keyboard Connect** and/or **Mouse Connect** options are activated, the number of seconds specified by **Release Time** has to elapse before a new user can gain control.

Modifying Switch Settings through the OSD
➔ Select **Configuration > Switch** in the main menu.

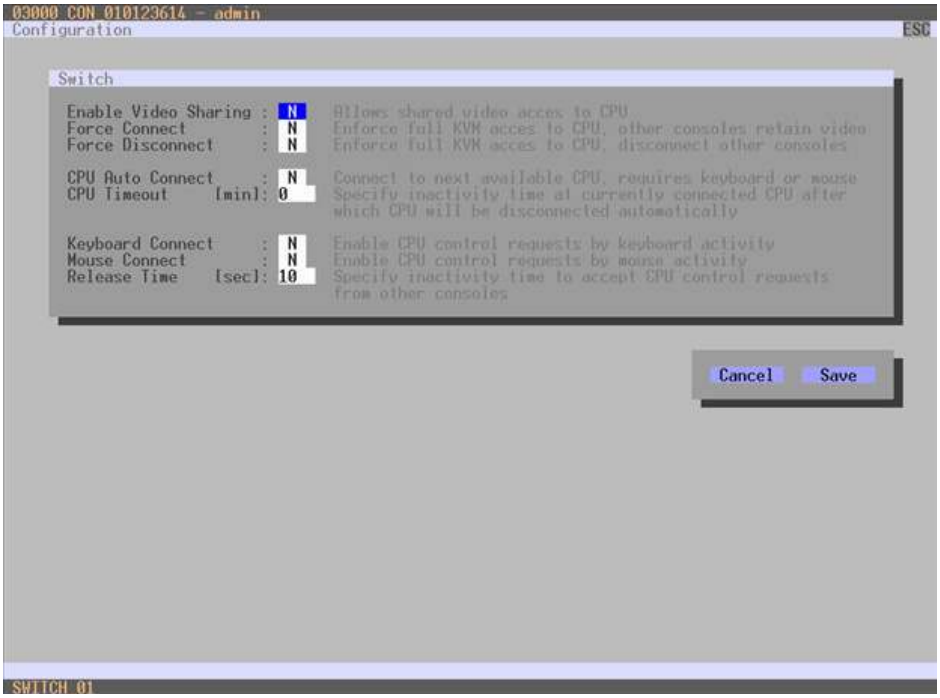

Figure 35. Modifying Switch Settings through the OSD

Select between the following buttons:

Button	Function
Cancel	Reject changes
Save	Save changes

Modifying Switch Settings through the Java Tool
➔ Select **System > Switch** in the task area.

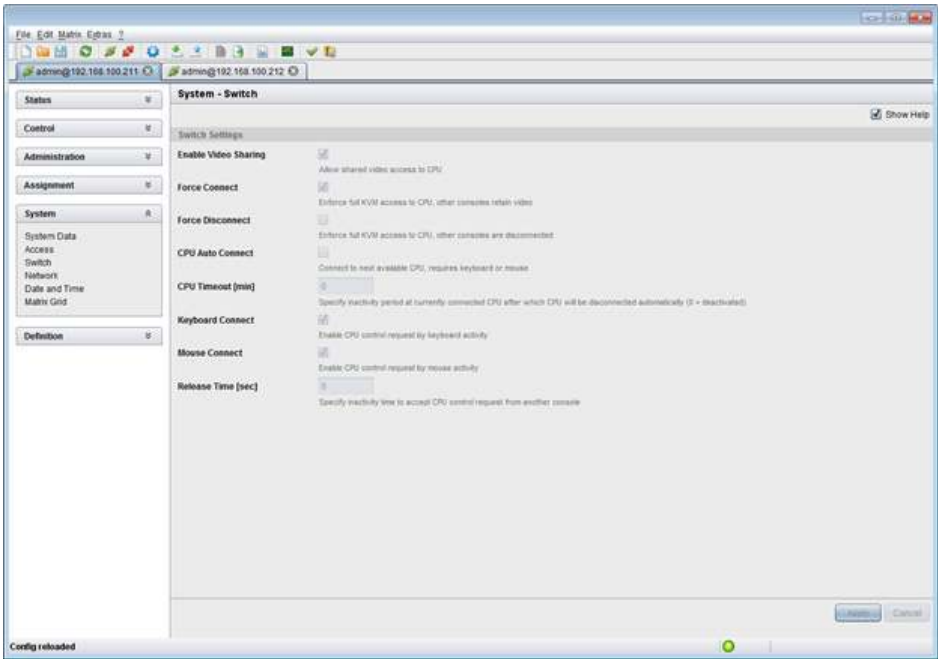

Figure 36. Modifying Switch Settings through the Java Tool

Network

This menu contains the network configuration settings. It can be accessed in the OSD and the Java Tool.

The following Network settings can be modified.

Field	Selection	Description
DHCP	Activated	The network settings are automatically supplied by a DNS server **Note:** If DHCP is activated and there is no physical network connection available, matrix boot time might increase.
	Deactivated	Function not active (default)
IP address	Byte	Enter the IP address to be used when DHCP is inactive (default: 192.168.100.99)
Subnet Mask	Byte	Enter the subnet mask to be used when DHCP is inactive (default: 255.255.255.0)
Gateway	Byte	Enter the gateway address in the form "192.168.1.1", to be used when DHCP is inactive
API Service	Activated	LAN interface of the Orion XC activated for access via Java tool (API service port 5555) (default)
	Deactivated	Function not active
FTP Server	Activated	FTP server for transmission of configuration files activated (default)
	Deactivated	Function not active
Syslog	Activated	Enable Syslog Messages for status reporting (license key required)
	Deactivated	Function not active (default)
Syslog Server	Byte	Enter the Syslog server's IP address in the form "192.168.1.1"
Trace	DEB	Activate debug messages in Trace (default: NO) **Note:** The debug messages are exclusively for matrix diagnostics. They should be activated only after consultation with Rose Electronics. Otherwise, increased data traffic might limit the performance of the equipment.
	INF	Activate information messages in Trace (default: NO)
	NOT	Activate notification messages in Trace (default: YES)
	WAR	Activate warning messages in Trace (default: YES)
	ERR	Activate error messages in Trace (default: YES)
Syslog	DEB	Activate debug messages in Syslog (default: NO) **Note:** The debug messages are exclusively for matrix diagnostics. They should be activated only after consultation with Rose Electronics. Otherwise, increased data traffic might limit the performance of the equipment.
	INF	Activate information messages in Syslog (default: NO)
	NOT	Activate notification messages in Syslog (default: YES)
	WAR	Activate warning messages in Syslog (default: YES)
	ERR	Activate error messages in Syslog (default: YES)

If changes are made to network parameters, save the changes and restart Orion XC to activate the changes.

Note: Consult your system administrator before modifying the network parameters. Otherwise unexpected results may occur, including failures with the network.

Modifying Network Settings through the OSD

➔ Select **Configuration > Network** in the main menu.

admin@CON_010125349
Configuration
ESC
Network Interface
DHCP : Y Enable configuration of network parameters via DHCP server
IP Address : 192 168 100 099
Subnet Mask : 255 255 255 000
Gateway : 000 000 000 000
Network Services
API Service : Y Enable API Service port (5555)
FTP Server : Y Enable FTP Server for configuration file transfers
Syslog : Y Enable Syslog Messages (license key required)
Syslog Server : 192 168 100 111
Log Levels
Trace : DEB N INF N NOT Y WAR Y ERR Y
Syslog : DEB N INF Y NOT N WAR N ERR Y
Cancel
Okay
SWITCH_01

Figure 37. Modifying Network Settings through the OSD

Select between the following buttons:

Button	Function
Cancel	Reject changes
Okay	Save changes

Modifying Network Settings through the Java Tool

➔ Select **System > Network** in the task area.

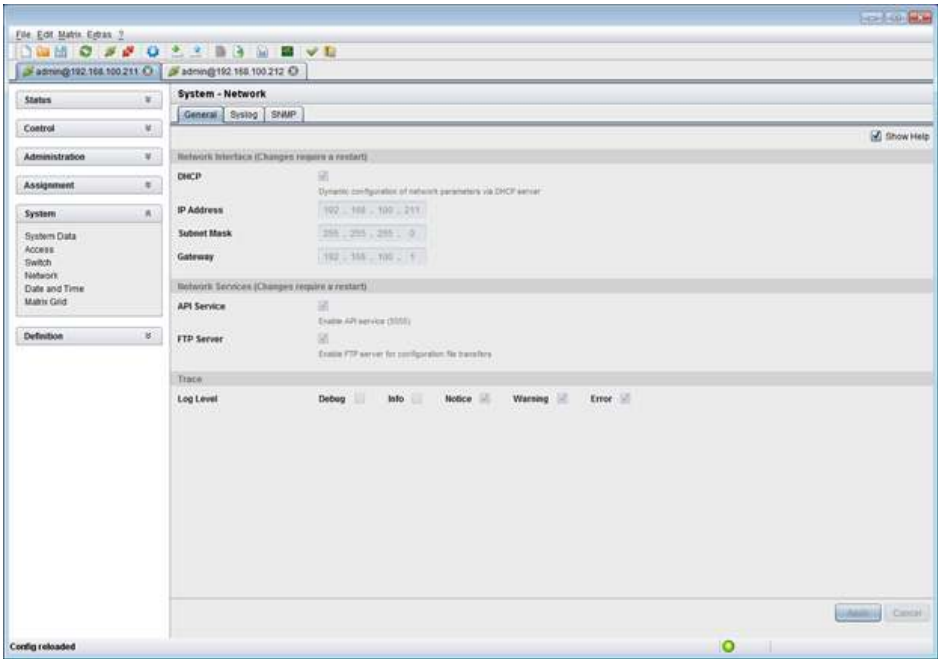

Figure 38. Modifying Network Settings through the Java Tool

Date and Time

This menu allows changes to the Date and Time, based on Simple Network Time Protocol (SNTP). This menu can be accessed in the OSD and the Java Tool.

The following settings can be modified.

Field	Selection	Description
SNTP Client	Activated	Enable network time server synchronization
	Deactivated	Function not active (default)
SNTP Server	Byte	Enter the SNTP server's IP address (default: 000.000.000.000)
Time Zone	Region	If SNTP is active, enter the time zone where the matrix is installed
Month	1-12	Enter month
Date	1-31	Enter date
Year	1-99	Enter year
Day of the week	1-7	Enter day of the week
Hours	0-23	Enter hour
Minutes	0-59	Enter minute
Seconds	0-59	Enter second

Note: Date format according to English notation.

Modifying Date and Time Settings through the OSD

➔ Select **Configuration > Date+Time** in the main menu.

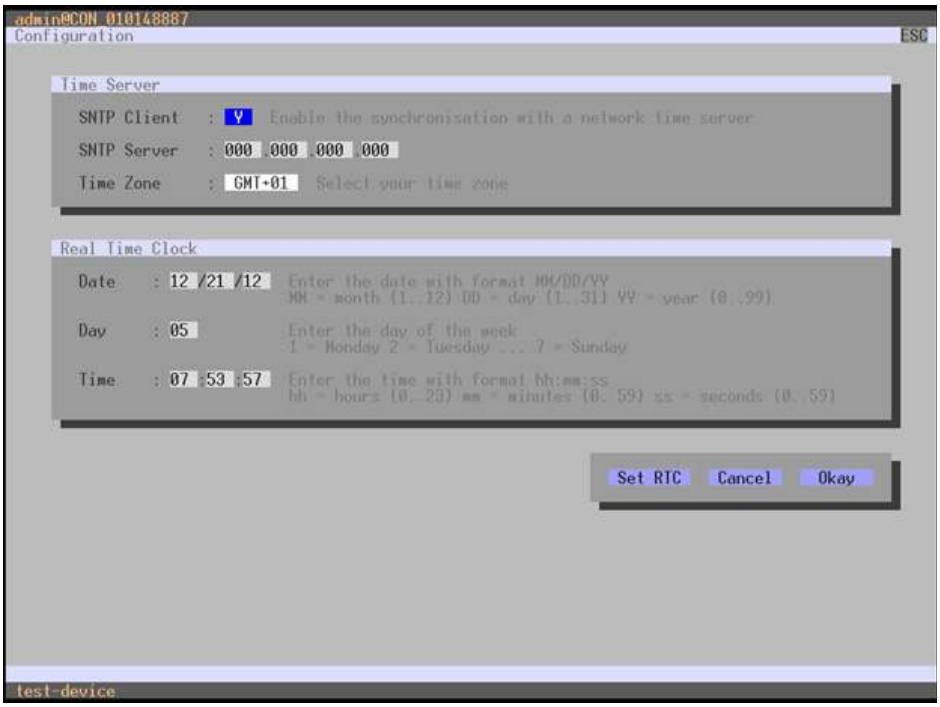
admin@CON 010148887
Configuration
ESC
Time Server
SNTP Client : Y Enable the synchronisation with a network time server
SNTP Server : 000 .000 .000 .000
Time Zone : GMT+01 Select your time zone
Real Time Clock
Date : 12 /21 /12 Enter the date with format MM/DD/YY
MM = month (1..12) DD = day (1..31) YY = year (0..99)
Day : 05 Enter the day of the week
1 = Monday 2 = Tuesday ... 7 = Sunday
Time : 07 :53 :57 Enter the time with format hh:mm:ss
hh = hours (0..23) mm = minutes (0..59) ss = seconds (0..59)
Set RTC
Cancel
Okay
test-device

Figure 39. Modifying Date and Time Settings through the OSD

To configure Orion XC to use a timeserver, proceed as follows:

1. Set the **SNTP Client** option to **Y** (Yes).
2. Enter the IP address of the SNTP server in the **SNTP Server** field.
3. Select the time zone for the region where the Orion XC is located in the **Time Zone** field.
4. Click the **Okay** button to confirm the settings.
5. Restart the matrix. The system time will now be synchronized with the SNTP server.

To set the real time clock without using SNTP, proceed as follows:
1. Set the current date in the **Date** field.
2. Set the current day of the week in the **Day** field (Monday = 1).
3. Enter the current time (international standard notation) in the **Time** field.
4. Click the **Set RTC** button to confirm the settings.

Modifying Date and Time Settings through the Java Tool

➔ Select **System > Date and Time** in the main menu.

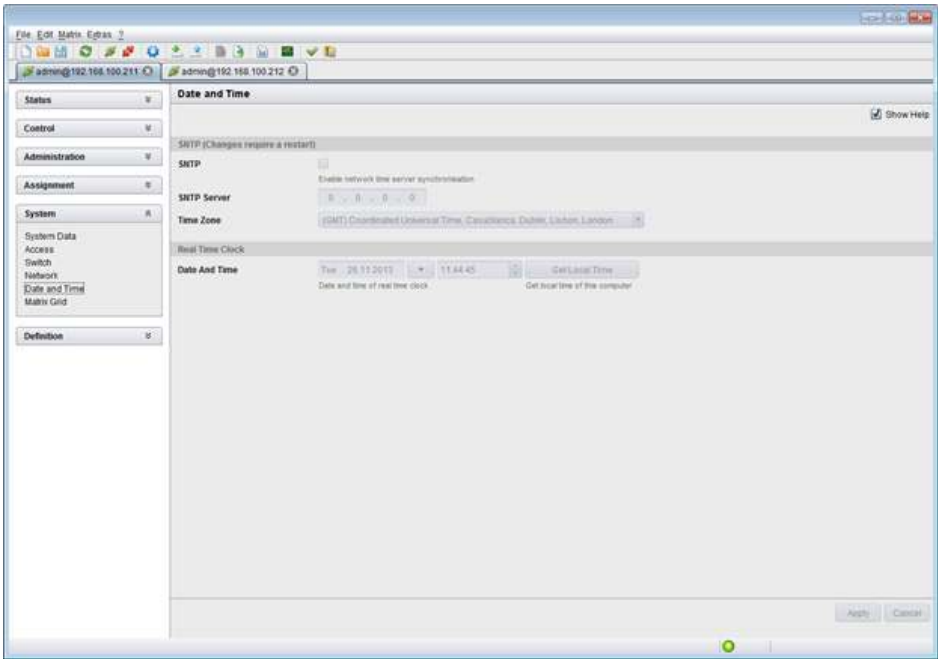

Figure 40. Modifying Date and Time Settings through the Java Tool

To configure Orion XC to use a timeserver, proceed as follows:
1. Enable **SNTP** option.
2. Enter the IP address of the SNTP server in the **SNTP Server** field.
3. Select in the **Time Zone** field the time zone for the region where the Orion XC is located.
4. Click the **Apply** button to confirm the settings.
5. Restart the matrix. The system time will be now synchronized with the SNTP server.

To set the real time clock without using SNTP, proceed as follows:
1. Set the current date in the **Date** field.
2. Set the current time in the **Time** field.
3. Click the **Apply** button to set the system time.
4. Option: To set the Orion XC time using the current time of the computer running the Java tool, click the **Get Local Time** button.

User Settings

User identities and their privilege levels can be created and modified on the Orion XC.

User

This menu is used to create and modify user identities their privileges. It can be accessed with the OSD and the Java Tool.

The following settings can be modified.

Field	Selection	Description
Name	Text	User name (case sensitive)
Password	Text	User password (case sensitive)
Repeat Password	Text	Repeat user password (case sensitive)
FTP	Activated	Permission to access matrix through FTP. This setting is necessary for access from the Java tool or any web browser.
	Deactivated	Function not active (default).
Power User	Activated	▪ User has basic user rights ▪ Permission to switch consoles to CPUs in **Extended Switching** according to the **CON** or **User ACL**
	Deactivated	Function not active.
Super User	Activated	Permission to switch any console to any CPU in **Extended Switching**.
	Deactivated	Function not active.
Administrator	activated	▪ Permission for system configuration and all switching operations ▪ User has administrator rights ▪ This setting is required for an online connection with the Java tool
	deactivated	Function not active.

Modifying User Settings through the OSD

➔ Select **Configuration > User** in the main menu.

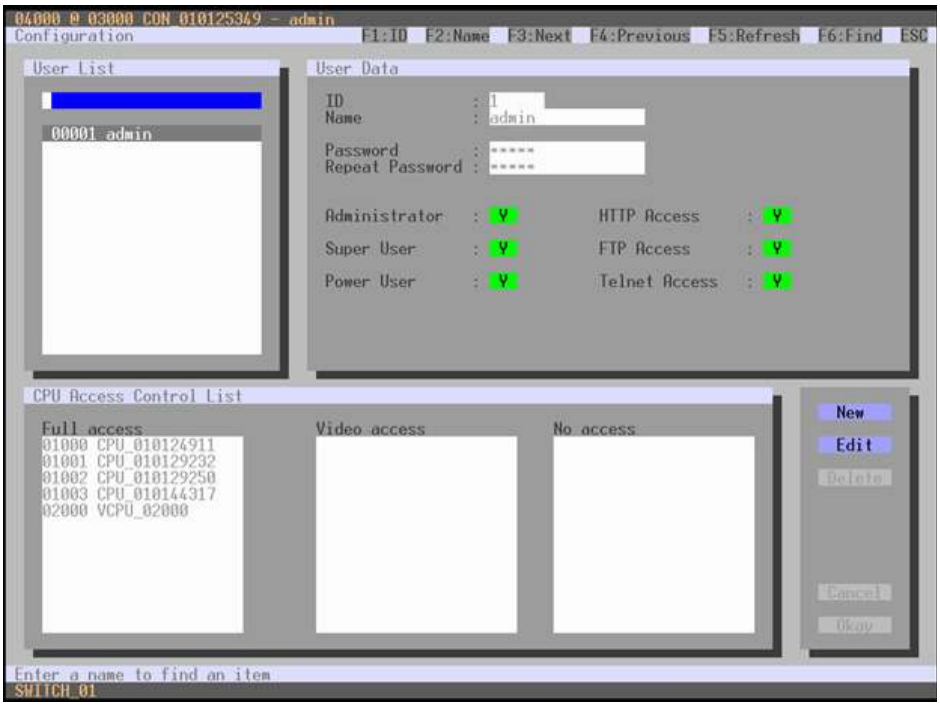

Figure 41. Modifying User Settings through the OSD

Select between the following buttons:

Button	Function
New	Create a new user
Edit	Edit an existing user
Delete	Delete an existing user
Cancel	Reject changes
Okay	Save Changes

Modifying User Settings through the Java Tool

➔ Select **Definition > User** in the task area.

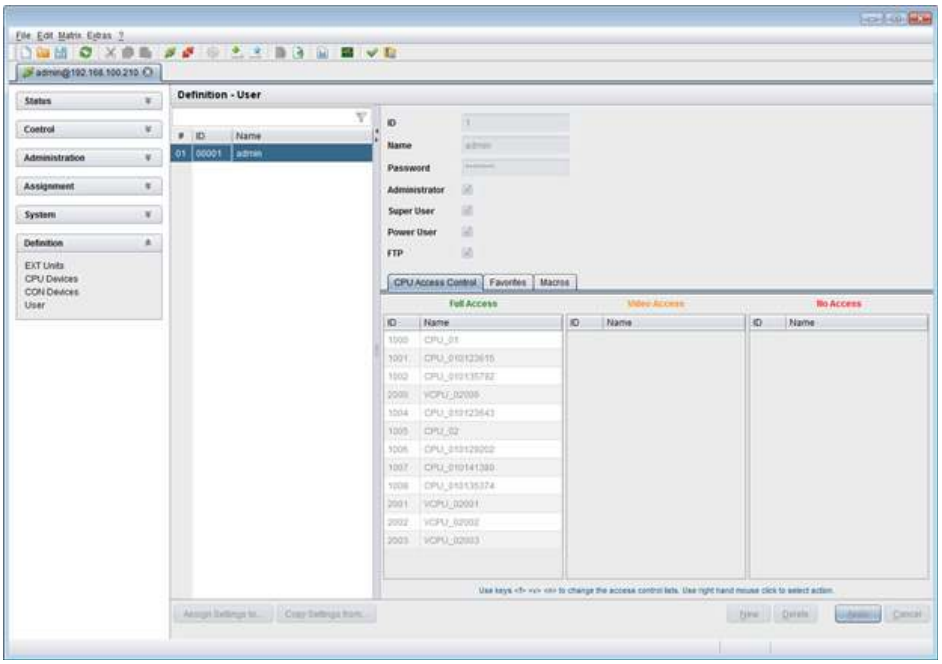

Figure 42. Modifying User Settings through the Java Tool

Select between the following buttons:

Button	Function
New	Open a new user configuration
Delete	Delete an existing user
Apply	Create a new user account
Cancel	Reject changes

To create a new user, proceed as follows:

1. Click the **New** button.
2. Press the **OK** button.
3. Enter a user name.
4. Enter a password.
5. Select the desired privilege level.
6. Set user favorites for OSD access.
7. Press the **Apply** button to save the new user settings.

To configure user's access rights to CPUs, proceed as follows:

1. Select a user in the **User** list.
2. Three access lists (**Full Access**, **Video Access** and **No Access**) are displayed, with the available CPUs displayed in the assigned access lists.
3. To move a CPU to a different access list, right click on it, and from the popup window select the access list to which the CPU should be moved.
4. Confirm the configuration with the **Apply** button.

The following keyboard commands also can be used.

Function	Keyboard Command
Add CPU to list **Full Access**	<F>
Add CPU to list **Video Access**	<V>
Add CPU to list **No Access**	<N>

User Favorites List

This menu is used to create individual favorites lists of CPUs that users switch to frequently. A favorites list can contain up to 16 different CPUs. Switching between favorites can be done from the keyboard using a 'Hot Key'. This menu can be accessed in the OSD and the Java Tool.

Setting up User Favorites through the OSD

➔ Select **Assignments > User Favorites** in the main menu.

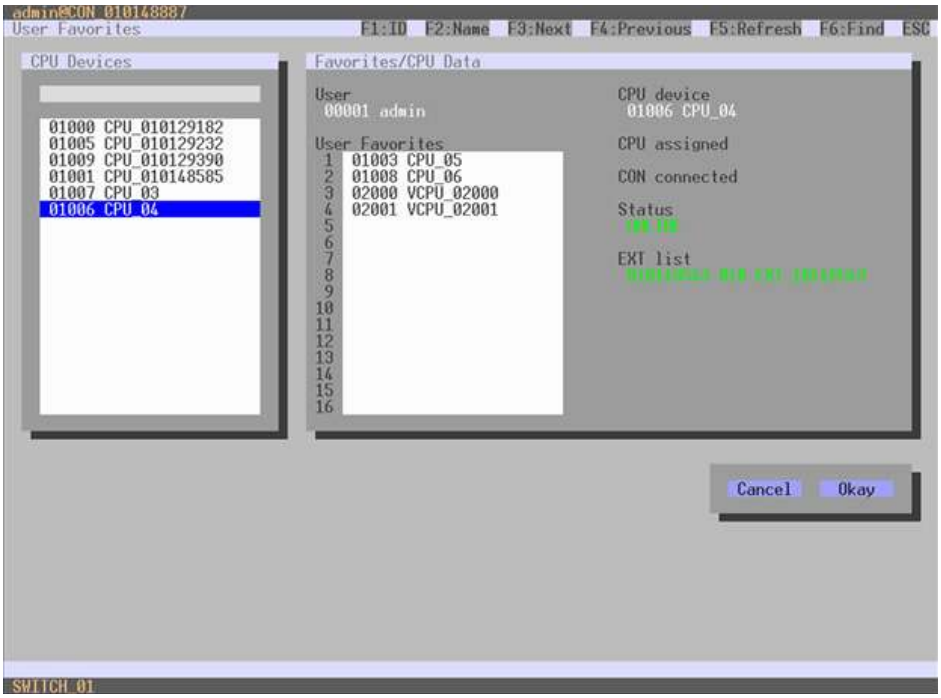

Figure 43. Setting Up User Favorites through the OSD

To create a favorites list for a user, proceed as follows:

1. Select a CPU from the **CPU Devices** list to add to the favorites list. Press <a> to add the CPU Device to the favorites list. Remove a CPU from a favorites list by selecting it and pressing <r>.
2. The order of the CPU devices within the favorites list can be changed by pressing <+> and <->.
3. Click the **Okay** button to save the settings.

Setting up User Favorites through the Java Tool

➔ In the working area of the **User** menu, select a user and then click the **Favorites** tab.

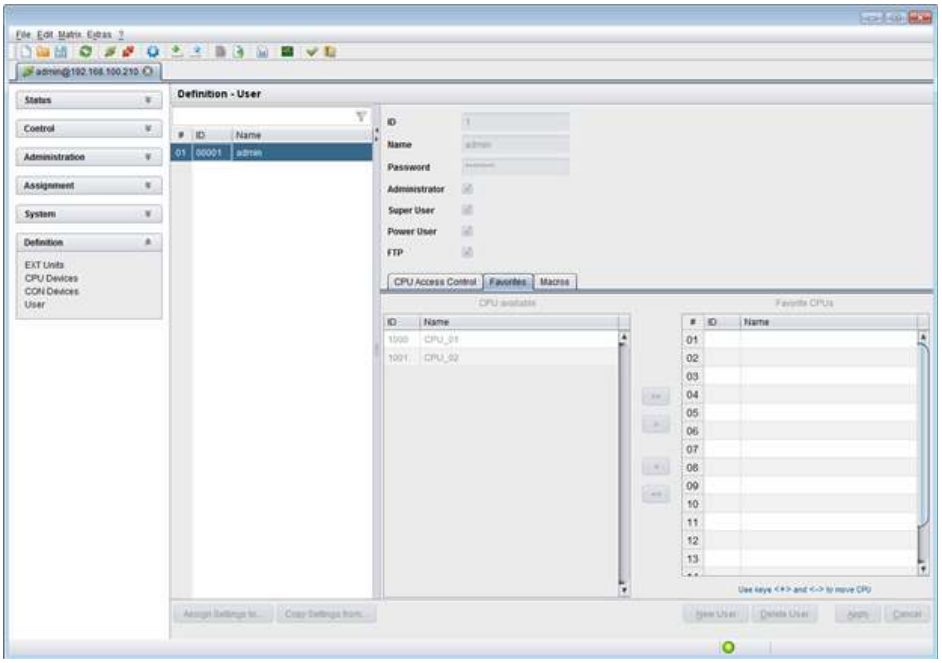

Figure 44. Setting Up User Favorites through the Java Tool

To create a favorites list for any user, proceed as follows:

1. Select CPUs in the **CPU available** list to be added to the user's favorites list. Press and hold the <Ctrl> key to select more than one CPU device at a time.
2. Click the **>** button to move the selected CPU devices to the favorites list. If the **>>** button is pressed, the first 16 CPU devices in the **CPU available** list will be moved to the favorites list.
3. A selected CPU device within the favorites list can be moved up or down in the list by pressing the <+> and <-> keys.
4. To remove a CPU from the favorites list, select it and press the **<** button. If the **<<** button is pressed, all CPU devices will be removed from the favorites list.

User Macros

This menu is used to create macro commands for switching, connection or user administration. It can be accessed in the OSD and the Java Tool.

Macro commands are created for each user individually. A macro can execute up to 16 switching commands successively. Macros are invoked by pressing the 'Hot Key' and the function keys <F1> to <F16>.

Note: The user must be logged in to the Orion XC to invoke user macros.

The following actions can be assigned to a User Macro:

Field	Selection	Description
Function (01-16)	**Connect (P1=CON, P2=CPU)**	Make a bidirectional connection from console P1 to CPU P2
	Connect Video (P1=CON, P2= CPU)	Make a video connection from console P1 to CPU P2
	Connect Private (P1=CON, P2= CPU)	Make a private connection from console P1 to CPU P2
	Disconnect (P1=CON)	Disconnect console P1
	Logout User	Logout current user
	Assign CPU (P1=VCPU, P2=RCPU)	Assign a virtual CPU to a real CPU
	Assign CON (P1=RCON, P2=VCON)	Assign a real console to a virtual console
	Push (P1=CON)	The user's current KVM connection is forwarded to console P1 and is changed to a video only connection.
	Push Video (P1=CON)	The video signal of the user's current connection (KVM or video only) is forwarded to console P1. The user's connection remains unchanged (KVM or video only).
	Get (P1=CON)	The user's console gets a KVM connection to the CPU that is currently connected to console P1. The connection of console P1 is changed into a video only connection.
	Get Video (P1=CON)	The user's console gets a video only connection to the CPU that is currently connected to console P1. The connection of console P1 remains unchanged (KVM or video only).
	Login User (P1=CON, P2=User)	Login at console P1 User P2

Setting up User Macros through the OSD

➔ Select the user for whom a macro is to be created from the **Configuration > User Macros** screen.

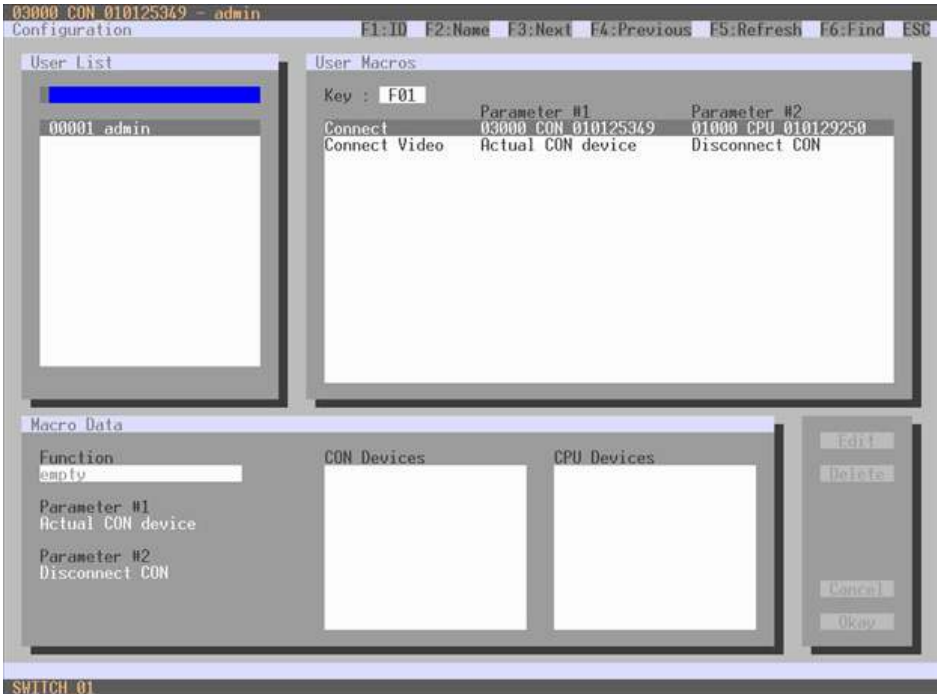

Figure 45. Setting Up User Macros through the OSD

To create a macro for the selected user, proceed as follows:

1. In the **Key** field, select the function key (F1 to F16) to which a macro is to be assigned.
2. Select the position in the **Key** list (1-16) where a macro command is to be inserted.
3. Select a Function in the **Macro Data** field. Press the keyboard up or down arrow keys to change functions.
4. Set the necessary parameters **P1** and **P2** (e.g. CON Devices, CPU Devices, or Users) for the selected macro command.
5. Confirm the macro by pressing the <Enter> key and repeat the process for further macro commands, if necessary.

Setting up User Macros through the Java Tool

➔ In the working area of the **Definition > User** screen, select the user for whom macros are to be created, and then click the **Macros** tab.

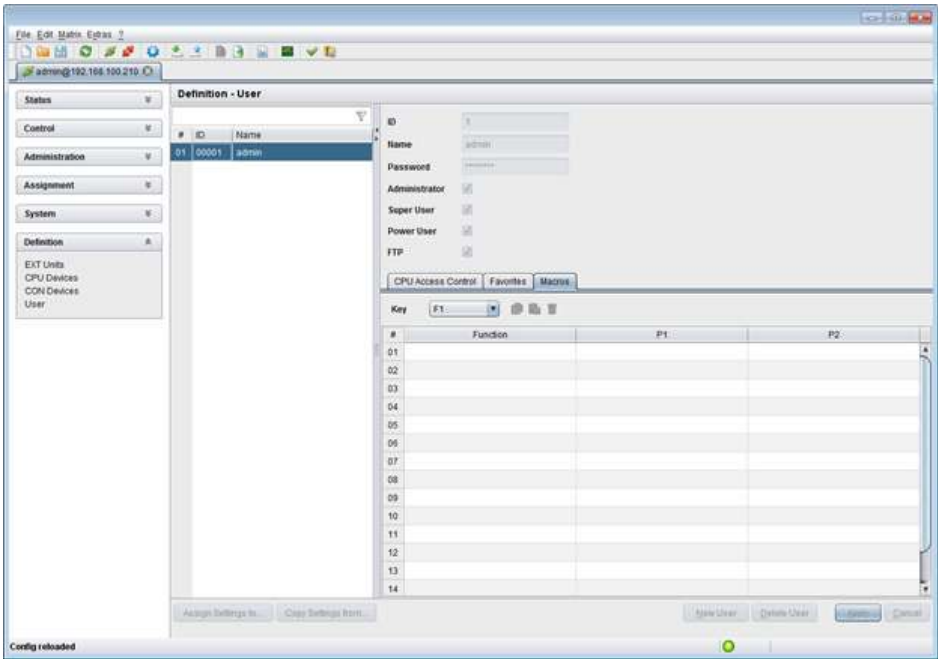

Figure 46. Setting Up User Macros through the Java Tool

To create a macro for the selected user, proceed as follows:

1. Select the Function key (F1 to F16) in the **Key** field to assign to the macro.
2. Select the commands that should be part of the macro in the **Function** column. Double click the Function column and select from the list of functions.
3. Select the values for parameters **P1** and **P2**, as required (e.g. corresponding consoles and CPUs).
4. Confirm the inputs by pressing the **Apply** button.

For convenient macro configuration, the following context functions are available:

➔ To assign a given user's macros to other users, click on the user's name, then click the **Assign Settings to ...** button below the User list. Select **Macros** from the list of settings displayed, and then click **Next**. Select the user or users to receive the macros from the list of available user names and click the **>** button to add those names to the Assign settings to… list. Click **Finish** to complete the macros assignment. The **Copy Settings from ...** button functions similarly, except the user to receive macros is selected first.

➔ All the macro commands of a selected key can be copied into the cache by clicking the **Copy Key Macros** icon. These macros can then be pasted into a different key by selecting the key and clicking the **Paste Key Macros** icon. All macros of a selected key can be removed by using the **Delete Key Macros** function.

Extender Settings

The creation of new extender units and the deletion of existing extender units are managed in this menu. It can be accessed in the OSD and the Java Tool.

The extender unit describes a physical extender connected to the matrix. Every extender board with a direct cable connection to the matrix is recognized as an extender unit. Dual-Head KVM extenders are recognized as two independent extenders.

When KVM Extenders are connected to the matrix, extender units are created automatically in the matrix.

The following settings can be modified.

Field	Selection	Description
ID	Text	Numerical value of the extender ID. For KVM Extenders, the ID is the serial number provided by the extender unit, and cannot be changed.
Name	Text	Name of the extender unit
Fixed	Activated	Create an extender unit with a fixed port assignment (default)
	Deactivated	Function not active.
Port	1-80 (depending on the matrix)	I/O Port number at which the extender unit is connected

Managing Extender Settings through the OSD

➔ Select **Configuration > EXT Units** in the main menu.

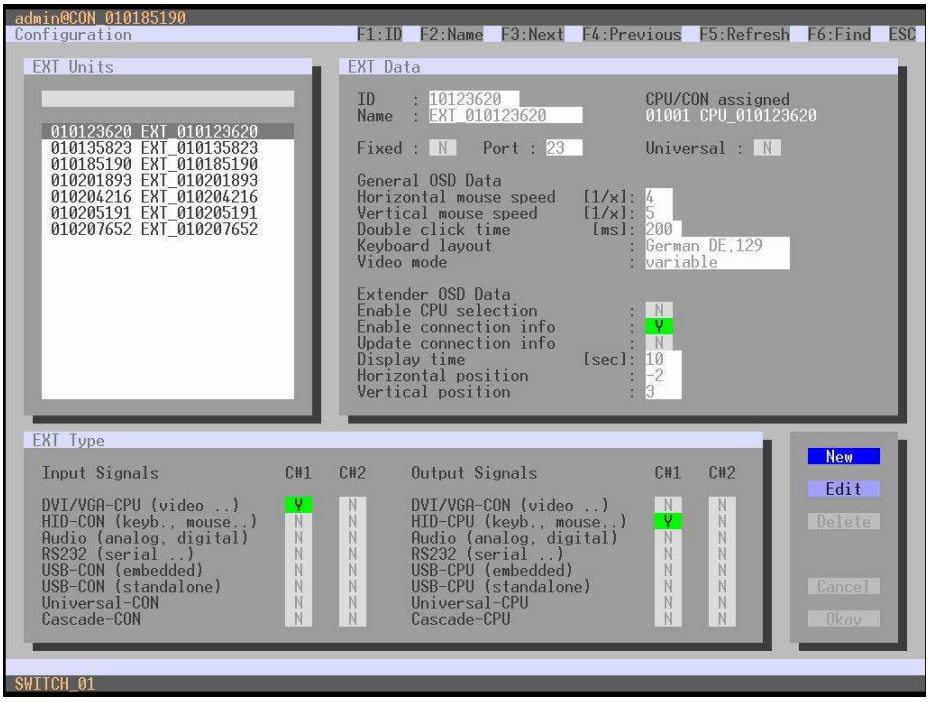

Figure 47. Managing Extender Settings through the OSD

Select between the following buttons:

Button	Function
New	Create a new extender unit
Edit	Edit an existing extender unit
Delete	Delete an existing extender unit
Cancel	Reject changes
Okay	Save Changes

Managing Extender Settings through the Java Tool
➔ Select **Definition > EXT Units** in the task area.

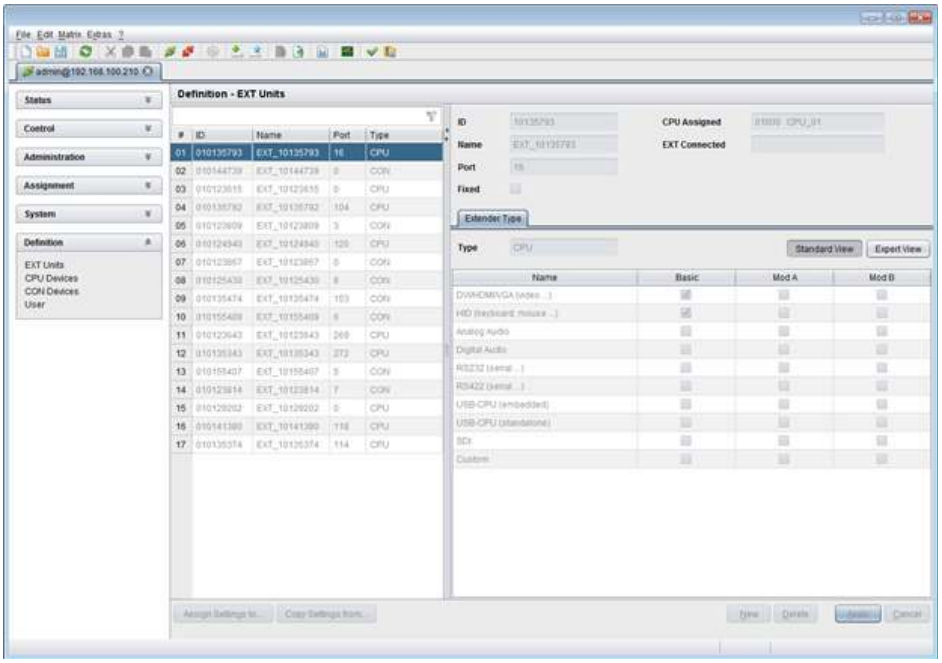

Figure 48. Managing Extender Settings through the Java Tool

Select between the following buttons:

Button	Function
New Unit	Create a new extender unit
Delete Unit	Delete an existing unit
Apply	Confirm changes of an extender unit
Cancel	Reject changes

Flex-Port Extender Units

Many extenders have functionality which is automatically recognized by the system and these extenders cannot be created manually. This is the Flex Port function of the matrix.

Note: The connection of fixed port extender unit (e.g. USB 2.0) to a Flex Port can cause unintended results.

USB 2.0 Extender

This section describes how to configure and use USB 2.0 extenders. USB 2.0 extenders must be connected to standard I/O boards. They can be configured for independent switching, or can be assigned to existing KVM extenders. USB 2.0 extenders can be configured through the OSD or the Java Tool.

Configuring USB 2.0 Extenders through the OSD

Select **Configuration > EXT Units** in the main menu.

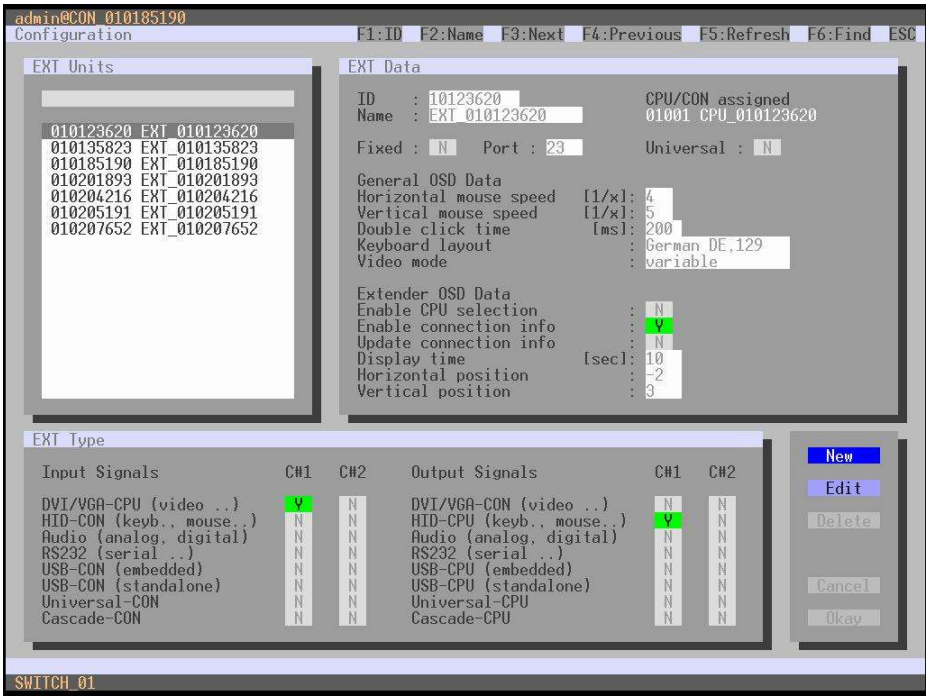

Figure 49. Configuring USB 2.0 Extenders through the OSD

To create a USB 2.0 extender definition through the OSD, proceed as follows:

1. Press the **New** button. An extender with an eight-digit ID will be created, starting with digit 9.
2. Assign an appropriate name to the extender in the **Name** field.
3. Enter the I/O port number where the USB 2.0 extender unit is connected to the matrix into the **Port** field.
4. To configure the created extender as a CON Unit, set the **USB-CON** (**standalone**) option to **Y** (**C#1** of **Input Signals)** and confirm by pressing the **Okay** button.
5. To configure the created extender as a CPU Unit, set the **USB-CPU** (**standalone**) option to **Y** (**C#1** of **Output Signals**), and confirm by pressing the **Okay** button.
6. To create an individually switchable device for the USB 2.0 CON extender, select **Configuration > CON Devices** and click the **New R** button.
   Alternatively, the USB 2.0 CON extender can be assigned to an existing CON Device. To do this, select the device, and move the USB 2.0 CON extender from the **EXT available** field into the **EXT assigned** field.
7. Give an appropriate name to the new Device in the **Name** field.
8. Repeat steps 6 and 7 for all USB 2.0 CPU extenders in the **Configuration > CPU Devices** menu.
9. If parallel operation is used within the matrix, set the **Release Time** in the **Configuration > Switch** screen to 10 s or more.
10. Restart all I/O boards on which USB 2.0 extenders have been configured, or alternatively restart the matrix.

The USB 2.0 extenders are now configured and can be used.

Configuring USB 2.0 Extenders through the Java Tool

➔ Select **Definition > EXT Units** in the task area.

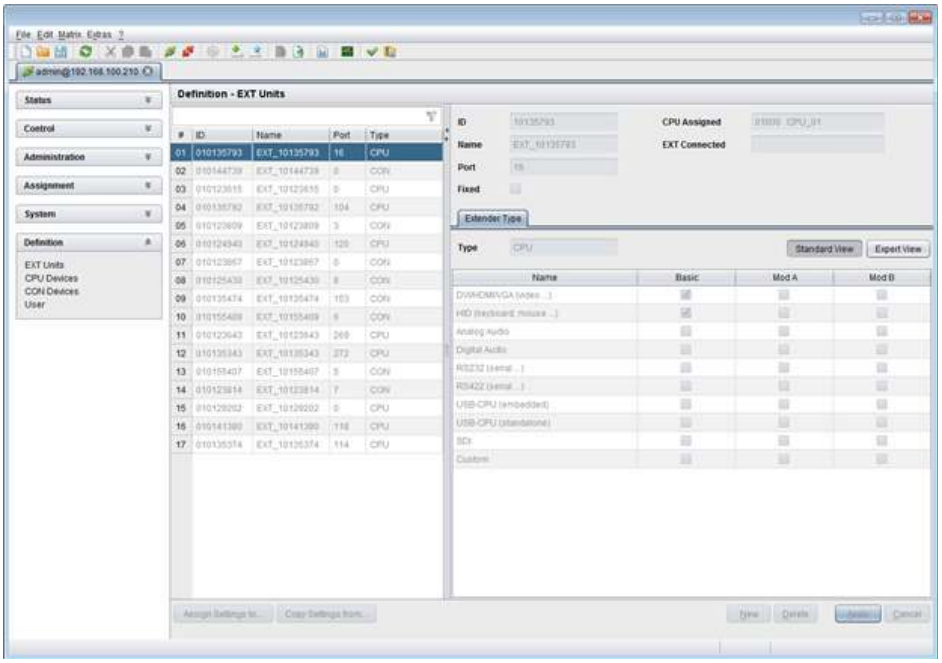

Figure 50. Configuring USB 2.0 Extenders through the Java Tool

To create a USB 2.0 extender definition through the Java Tool, proceed as follows:

1. Press the **New Unit** button. This opens a popup window.
2. From the **Templates** in the selection box, select **USB 2.0 CON Unit** or **USB 2.0 CPU Unit** and click the OK button. An extender with an eight-digit ID will be created, starting with digit 9.
3. Enter an appropriate name for the extender in the **Name** field.
4. Enter the port number of the matrix where the USB 2.0 extender is physically connected into the **Port** field.
5. Confirm the settings by pressing the **Apply** button.
6. The USB 2.0 CON extenders now have to be assigned to either an existing CON Device in the **Definition > CON Devices** screen, or a new CON Device has to be created for the assignment by pressing the **New** button.
7. The USB 2.0 CPU extenders now have to be either assigned to an existing CPU Device in the **Definition > CPU Devices** screen or a new CPU Device has to be created for the assignment by pressing the **New** button.
8. If parallel operation is used within the matrix, set the **Release Time** in the **Configuration > Switch** screen to 10 s or more.
9. Restart all I/O boards on which USB 2.0 extenders have been configured, or restart the matrix.

The USB 2.0 extenders are now configured and can be used.

Notes:

- Created extender units are always set as fixed port extenders. This configuration is necessary to enable switching USB 2.0 connections through the matrix.
- To make a fixed port available again for Flex-Port extender units after deleting a fixed port extender unit, restart the I/O board.

CPU Device Settings

New CPU devices are defined in this menu, including their assignment to extenders. The assignment helps to describe and switch more complex computer configurations (e.g. Quad-Head with USB 2.0) in the matrix. This menu can be accessed in the OSD and the Java Tool.

The following settings can be modified.

Field	Selection	Description
ID	Text	ID of the CPU unit
Name	Text	Name of the CPU device
Virtual Device	Activated	Create a new CPU device as a virtual CPU
	Deactivated	Function not active (default)
Allow Private	Activated	Allow switching to the respective CPU device in Private Mode
	Deactivated	Function not active (default)
Force Private	Activated	Force switching to the respective CPU only in Private Mode
	Deactivated	Function not active (default)
Fix Frame	Activated	Force showing a red frame when switching to the respective CPU
	Deactivated	Function not active (default)

Modifying CPU Settings through the OSD

➔ Select **Configuration > CPU Devices** in the main menu.

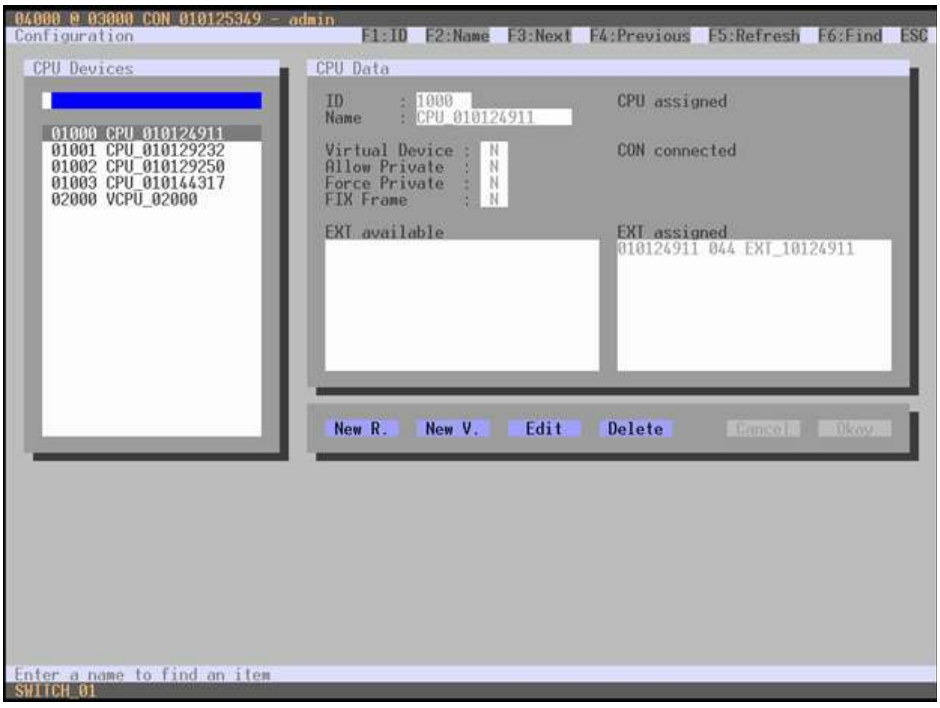

Figure 51. Modifying CPU Settings through the OSD

Select between the following buttons:

Button	Function
New R.	Create a new real CPU device
New V.	Create a new virtual CPU device
Edit	Edit an existing CPU device
Delete	Delete an existing CPU device
Cancel	Reject changes
Okay	Save changes

Modifying CPU Settings through the Java Tool

➔ Select **Definition > CPU Devices** in the task area.

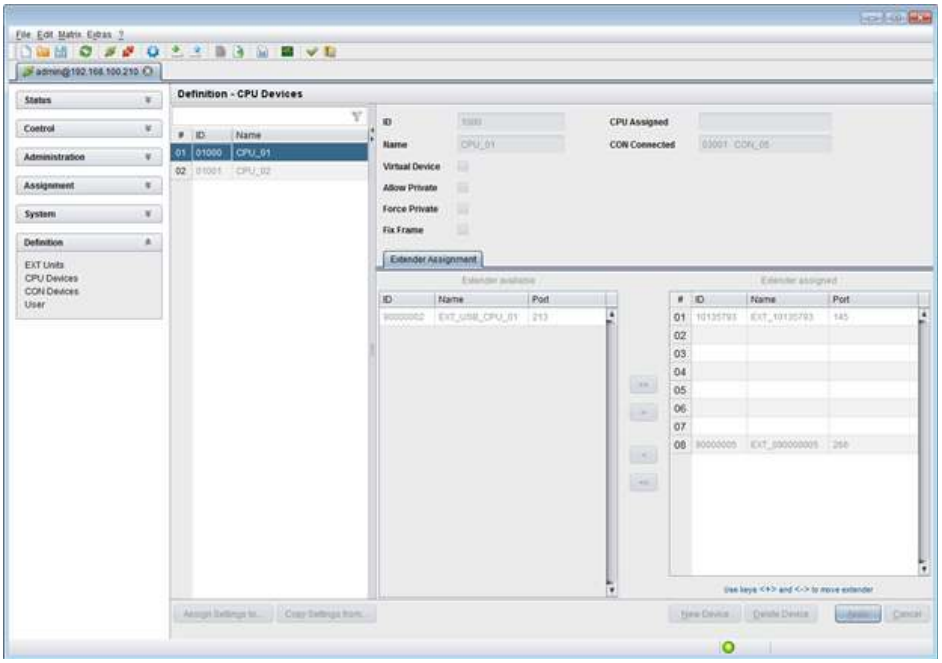

Figure 52. Modifying CPU Settings through the Java Tool

Select between the following buttons:

Button	Function
New Device	Open a new CPU Device
Delete Device	Delete a CPU Device
Apply	Confirm a created CPU Device
Cancel	Reject changes
>	Assign selected extender units
>>	Assign all available extender units
<	Remove the selected extender units
<<	Remove all extender units

The following keyboard commands can be used.

Function	Keyboard Command
Change assignment number of the EXT unit upwards	<+>
Change assignment number of the EXT unit downwards	<->

To create a new CPU device, proceed as follows:

1. Click the **New Device** button.
2. Select **Create a real CPU** or **Create a virtual CPU.** If a template of an existing CPU should be used, select **Choose template**.
   Note: A template can only be used, if there is at least one existing CPU device.
3. Click the **OK** button.
4. Select the desired parameters for the CPU.
5. To confirm the new CPU, click the **Apply** button.

To access a new CPU from the matrix, an assignment of one or more CPU type extender units is required. Proceed as follows:

1. Select the new CPU in the **CPU Devices** list.
2. Select one or more extenders in the **Extender available** list.
3. Perform the assignment by pressing the **>** button. To assign all available extenders to the CPU, press the **>>** button. The assignments are displayed in the **Extender assigned** list.
4. Confirm the assignment by pressing the **Apply** button.

To remove an extender assignment, proceed as follows:

1. Select a CPU in the **CPU Devices** list.
2. Select one or more extenders in the **Extender assigned** list.
3. Remove the assignment with the **<** button. To remove all existing assignments, press the **<<** button.
4. Confirm the removal with the **Apply** button.

Console Device Settings

This menu provides the ability to define and modify console settings.

CON Devices

New CON devices are created with this menu. This includes setting access rights and assigning to extenders. The menu can be accessed in the OSD and the Java Tool.

The following settings can be modified.

Field	Selection	Description
ID	Text	ID of the CON Unit
Name	Text	Name of the CON Device
Virtual Device	Activated	Create new CON device as a virtual one
	Deactivated	Function not active (default)
Allow User ACL	Activated	Allow activation of the User ACL at the local console
	Deactivated	Function not active (default)
Force Login	Activated	Force user login at this CON device
	Deactivated	Function not active (default)
LOS Frame	Activated	▪ When the video signal between source (computer, CPU) and the CPU Unit or the connection between matrix and the CON Unit is lost, an orange frame will be displayed. ▪ When switching to a CPU without video signal, a blank screen will appear surrounded by an orange frame.
	Deactivated	Function not active (default)
Allow CPU Scan	Activated	Allow scan mode where CPUs in the logged-in user's favorites list are cycled through in the console.
	Deactivated	Function not active (default)
Force CPU Scan	Activated	Force scan mode where CPUs in the logged-in user's favorites list are cycled through in the console.
	Deactivated	Function not active (default)
Scan Time	0-99 seconds	Length of time before scan mode switches to the next CPU in the list
Port Mode	Activated	The favorites list will be replaced by a port list where the ports from 1-99 can be directly selected at each matrix. CON and User favorites lists are deactivated when using Port Mode.
	Deactivated	Function not active (default)

Setting up CON Devices through the OSD

➔ Select **Configuration > CON Devices** in the main menu.

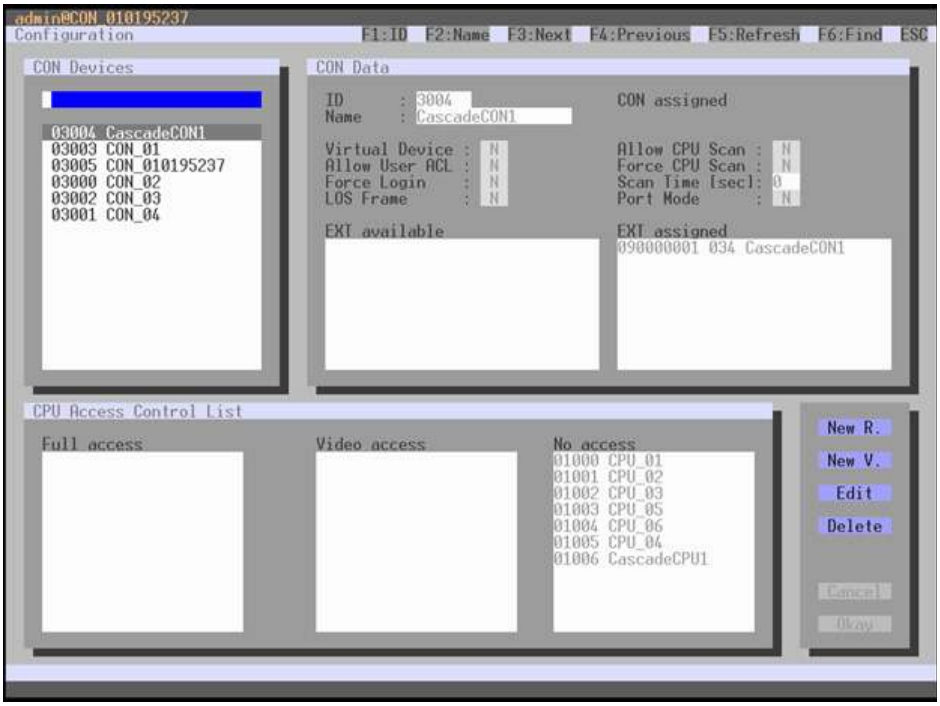

Figure 53. Setting Up CON Devices through the OSD

Select between the following buttons:

Button	Function
New R.	Create a new real console
New V.	Create a new virtual console
Edit	Edit an existing console
Delete	Delete an existing console
Cancel	Reject changes
Okay	Save changes

Setting up CON Devices through the Java Tool
➔ Select **Definition > CON Devices** in the task area.

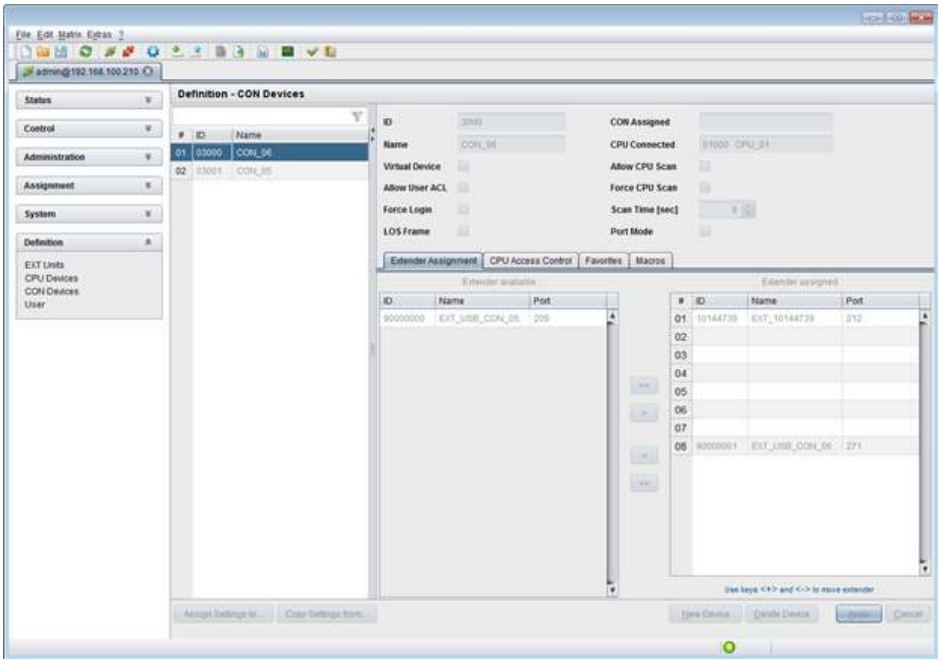

Figure 54. Setting Up CON Devices through the Java Tool

Select between the following buttons:

Button	Function
New Device	Open a new CON Device
Delete Device	Delete a CON Device
Apply	Confirm a created CON Device
Cancel	Reject changes
>	Assign selected extender units
>>	Assign all available extender units
<	Remove the selected extender units
<<	Remove all extender units

The following keyboard commands can be used.

Function	Keyboard Command
Change assignment number of the EXT unit upwards	<+>
Change assignment number of the EXT unit downwards	<->

To create a new console, proceed as follows:

1. Click the **New Device** button.
2. Select whether to create a real console (**Create a real Console**) or a virtual console (**Create a virtual Console**), or whether a template of an existing console should be used (**Choose template**).
   Note: A template can only be selected if there is at least one existing CON device.
3. Click the **OK** button.
4. Make all parameter selections that are relevant for the console.
5. To confirm the creation of the new console, click the **Apply** button.

One or more CON Units (extender) must be assigned to the console device for it to access a CPU through the matrix. To make an extender assignment, proceed as follows.

1. Select the console in the **CON Devices** list to be assigned an extender.
2. Select the extender in the **Extender available** list to assign to the CON Device.
3. Perform the assignment by clicking the **>** button. To assign all available extenders to the console, click the **>>** button. The assignments are displayed in the **Extender assigned** list.
4. Confirm the assignment by clicking the **Apply** button.

To remove an extender assignment, proceed as follows:

1. Select the console to modify in the **CON Devices** list.
2. Select the extender to be removed from assignment to the console in the **Extender assigned** list.
3. Remove the assignment with the **<** button. To remove all existing assignments, click the **<<** button.
4. Confirm the removal with the **Apply** button.

To configure a console's CPU access rights, proceed as follows:

1. Select a console in the **CON Devices** list.
2. Select the **CPU Access Control** tab.
3. Assign access rights by using the right mouse button or the respective keyboard commands (see the table below).
4. Confirm the configuration by clicking the **Apply** button.

The following keyboard commands can be used.

Function	Keyboard Command
Add CPU to list **Full Access**	<F>
Add CPU to list **Video Access**	<V>
Add CPU to list **No Access**	<N>

Mouse and Keyboard

Mouse and keyboard behavior in the OSD menus can be configured in this menu. It can be accessed in the OSD and the Java Tool.

The following settings are available.

Field	Selection	Description
Hor. Speed 1/x	1-9	Adjustment of the horizontal mouse speed, 1 = slow, 9 = fast (default value: 4)
Ver. Speed 1/x	1-9	Adjustment of the vertical mouse speed, 1 = slow, 9 = fast (default value: 5)
Double Click	100-800	Set the maximum time between 2 mouse clicks for them to be recognized as a double click (default value: 200 ms)
Keyboard Layout	Region	Set the keyboard layout used by the OSD to match that of the keyboard in use (English US, German, etc).
Video Mode	Variable or specific resolution	Display resolution used for the OSD

Note: Mouse and keyboard settings are console specific and can be separately set for each console.

Modifying Mouse and Keyboard Settings through the OSD

➔ Select **Configuration > EXT Units** in the main menu.

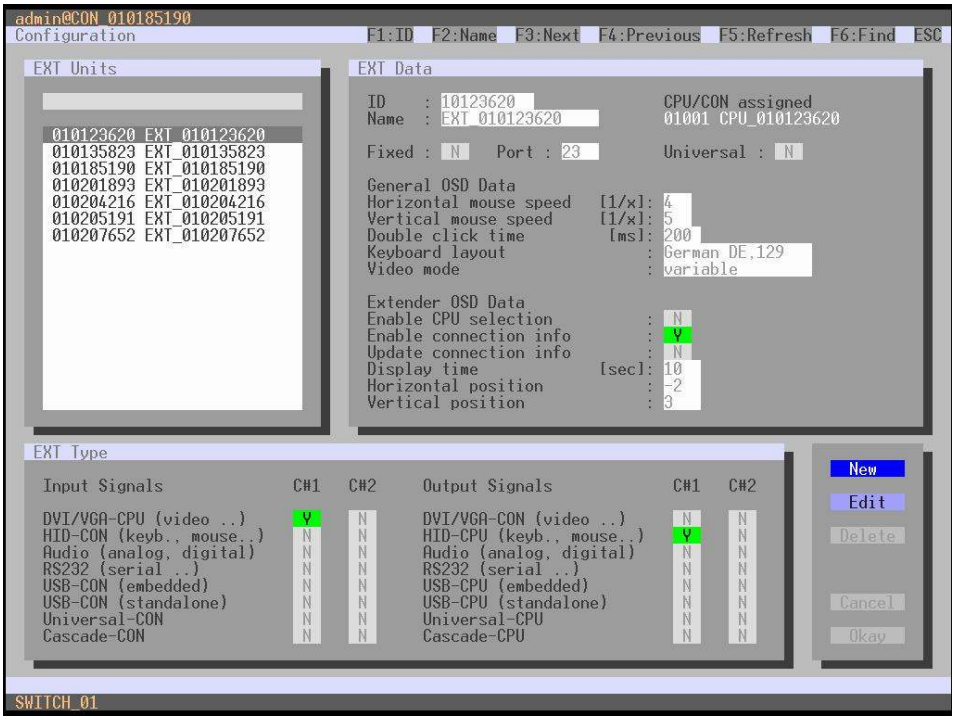

Figure 55. Modifying Mouse and Keyboard Settings through the OSD

Select between the following buttons:

Button	Function
Cancel	Reject changes
Okay	Save changes

Modifying Mouse and Keyboard Settings through the Java Tool

➔ Select **Definition > EXT Units** in the task area. Mouse and keyboard settings are found in the **General OSD Data** tab.

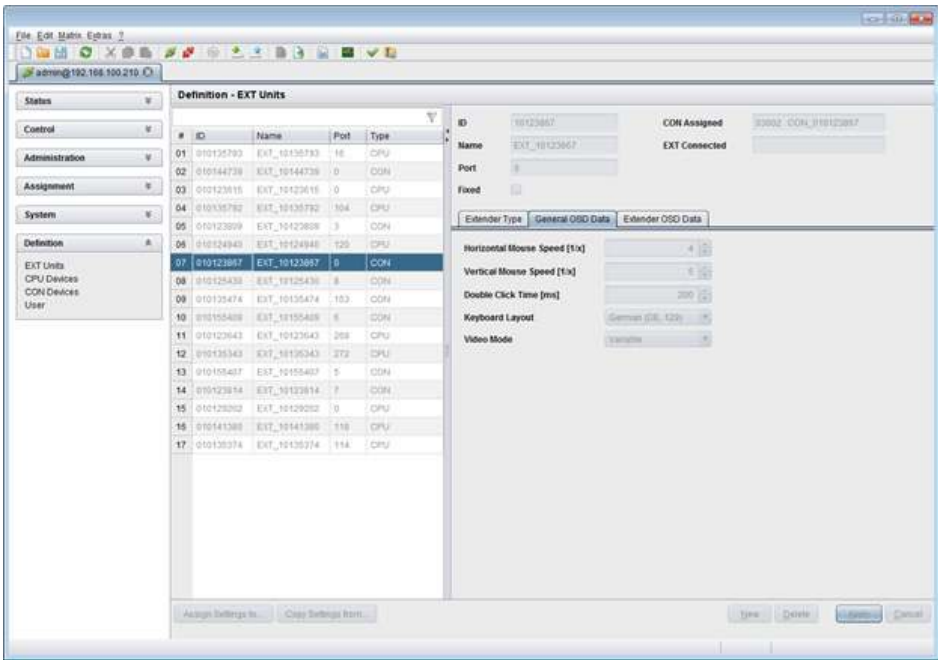

Figure 56. Modifying Mouse and Keyboard Settings through the Java Tool

Extender OSD

The Extender OSD settings can be adjusted. These local settings apply to individual consoles. The settings can be accessed from the OSD and the Java Tool.

The following Extender OSD settings are available.

Field	Selection	Description
Enable CPU Selection	Activated	When opening the OSD with the key sequence, a CPU selection list will be displayed in the center of the screen. Pressing <F7> while the selection list is displayed opens the standard OSD.
	Deactivated	Function not active (default)
Enable Connection Info	Activated	Enable Extender OSD (default)
	Deactivated	Function not active
Update Connection Info	Activated	Update connection changes during fade-in of Extender OSD (default)
	Deactivated	Function not active
Display Time	0-999 seconds	Duration of OSD fade-in (default: 10)
Horizontal Position	10 pixels	Horizontal OSD position (default: -2)
Vertical Position	10 pixels	Vertical OSD position (default: 2)

Notes:

- When setting the horizontal OSD position, a prefixed minus describes the location with respect to the right edge of the monitor, e.g. -2 means 2 x 10 = 20 pixels of distance to this edge. When setting a vertical position, a prefixed minus describes the location with respect to the bottom edge of the monitor.
- If the **Update Connection Info** is deactivated, the Extender OSD only appears for switching via OSD.

Modifying Extender OSD Settings through the OSD

➔ Select **Configuration > EXT Units** in the main menu.

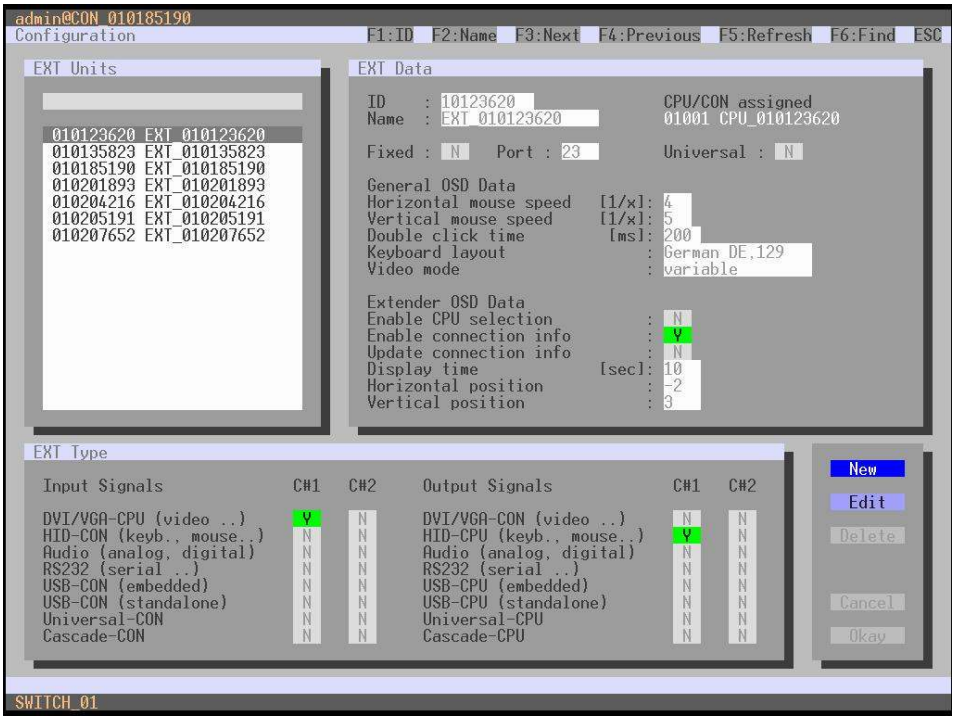

Figure 57. Modifying Extender OSD Settings through the OSD

In order to change the Extender OSD settings, proceed as follows:

1. Select the console extender in the **EXT Units** list for which Extender OSD settings are to be modified.
2. Confirm the selection by pressing the <Enter> key, and the respective console extender will be enabled for editing.
3. Make the desired modifications to the Extender OSD Data settings.
4. Click the **Okay** button to confirm the changes.

Modifying Extender OSD Settings through the Java Tool

➔ Select **Definition > EXT Units** in the task area.

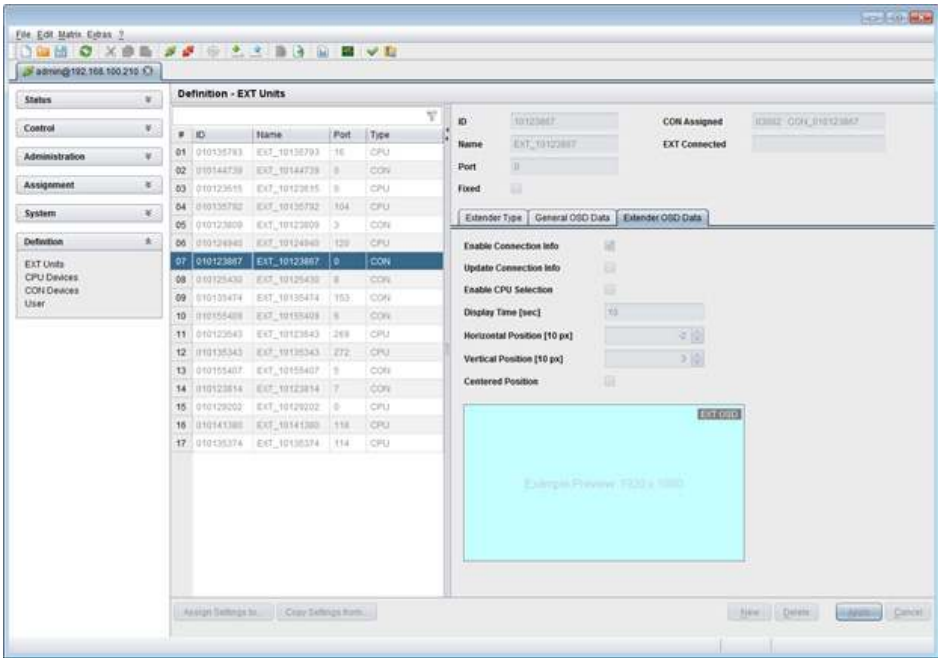

Figure 58. Modifying Extender OSD Settings through the Java Tool

In order to change the Extender OSD settings, proceed as follows:

1. Select the console extender in the **EXT Units** list for which Extender OSD settings are to be modified.
2. Click the **Extender OSD Data** tab to open it.
3. Modify the desired settings and confirm by clicking the **Apply** button.

Console Favorites

Lists of up to 16 favorite CPUs can be created for each console. Switching to a CPU in the console favorites list is done by pressing the keyboard 'Hot Key' sequence followed by the number of the CPU in the list (1 to 16). This menu can be accessed in the OSD and the Java Tool.

Setting up Console Favorites through the OSD

➔ Select **Assignments > CON Favorites** in the main menu.

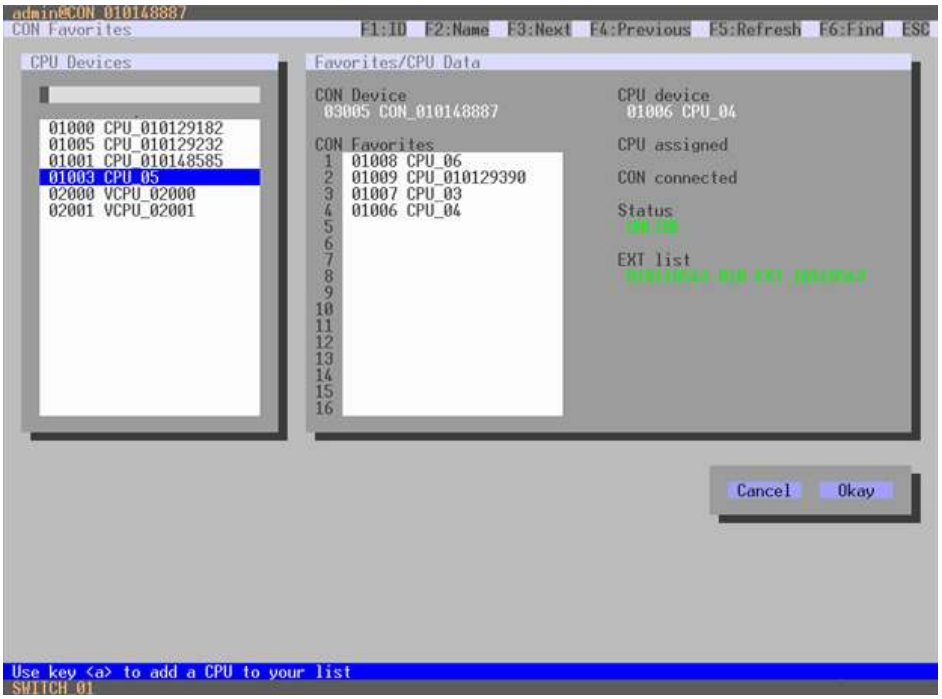

Figure 59. Setting up Console Favorites through the OSD

To create a list of favorites for the console in use, proceed as follows:

1. Select a CPU from the **CPU Devices** list. Press the keyboard <a> key to move the selected CPU device to the CON favorites list. Press the <r> key to remove a selected CPU from the favorites list. Repeat the process to add more CPUs to the favorites list.
2. The position of the CPU devices within the favorites list can be changed by selecting a CPU and pressing the <+> and <-> keys.
3. Click the **Okay** button to save the settings.

Setting up Console Favorites through the Java Tool

➔ Select **Definition > CON Devices** in the Task area, then select a console in the **CON Devices** list and click the **Favorites** tab to open it.

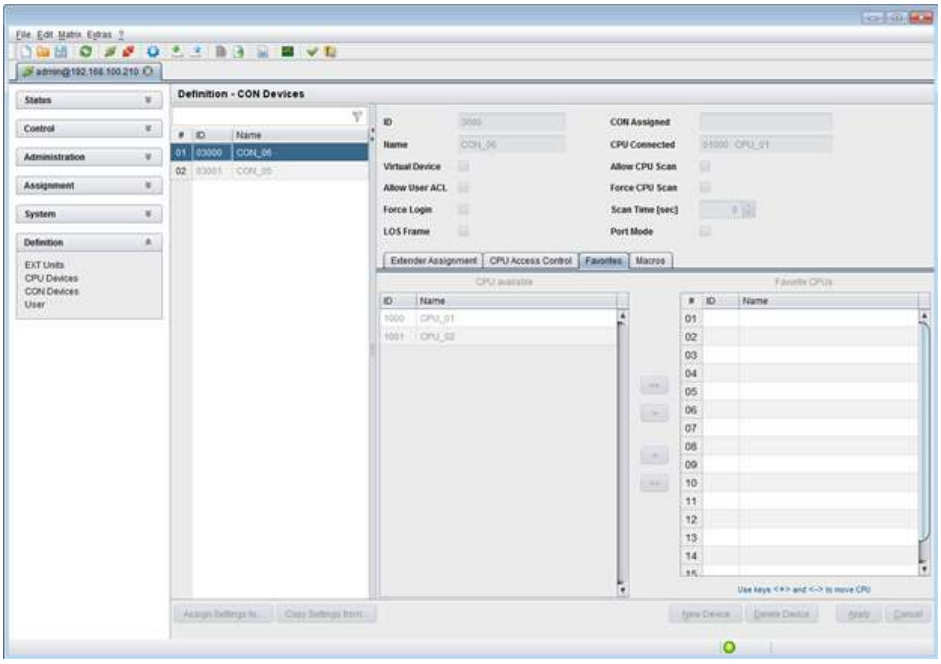

Figure 60. Setting Up Console Favorites through the Java Tool

To create a favorites list for any console, proceed as follows:

1. Select CPU devices in the **CPU available** list to be added to the console favorites list (**Favorite CPUs**). Press and hold the <Ctrl> key to select more than one CPU device at a time.
2. Click the **>** button to move the selected CPU devices to the favorites list. If the **>>** button is pressed, the first 16 CPU devices in the **CPU available** list will be moved to the favorites list.
3. The position of a selected CPU device within the favorites list can be changed by pressing the <+> and <-> keys to move the selected CPU up or down in the list.
4. To remove selected CPU devices from the favorites list, press the **<** button. If the **<<** button is pressed, all CPU devices will be removed from the console favorites list.

Console Macros

This screen is used to create console macro commands for switching, disconnecting or user administration. It can be accessed in the OSD and the Java Tool.

Console macro commands are created for each console separately. A single macro can execute up to 16 successive switching commands. Console macros are invoked by typing the keyboard 'Hot Key' sequence, followed by the function key assigned to the macro, <F1>-<F16>.

The following functions can be used in console macros.

Field	Selection	Description
Function (01-16)	**Connect (P1=CON, P2=CPU)**	Make a bidirectional connection from console P1 to CPU P2
	Connect Video (P1=CON, P2= CPU)	Make a video connection from console P1 to CPU P2
	Connect Private (P1=CON, P2= CPU)	Make a private connection from console P1 to CPU P2
	Disconnect (P1=CON)	Disconnect console P1
	Logout User	Logout current user
	Assign CPU (P1=VCPU, P2=RCPU)	Assign a virtual CPU to a real CPU
	Assign CON (P1=RCON, P2=VCON)	Assign a real console to a virtual console
	Push (P1=CON)	The console's KVM connection is forwarded to console P1 and is changed to a video only connection.
	Push Video (P1=CON)	The video signal of the console's current connection (KVM or video only) is forwarded to console P1. The console's connection remains unchanged (KVM or video only).
	Get (P1=CON)	The console gets a KVM connection to the CPU that is currently connected to console P1. The connection of console P1 is changed into a video only connection.
	Get Video (P1=CON)	The console gets a video only connection to the CPU that is currently connected to console P1. The connection of console P1 remains unchanged (KVM or video only).
	Login User (P1=CON, P2=User)	Login at console P1 User P2

Setting up Console Macros through the OSD

➔ Select **Configuration > CON Macros** from the main menu.

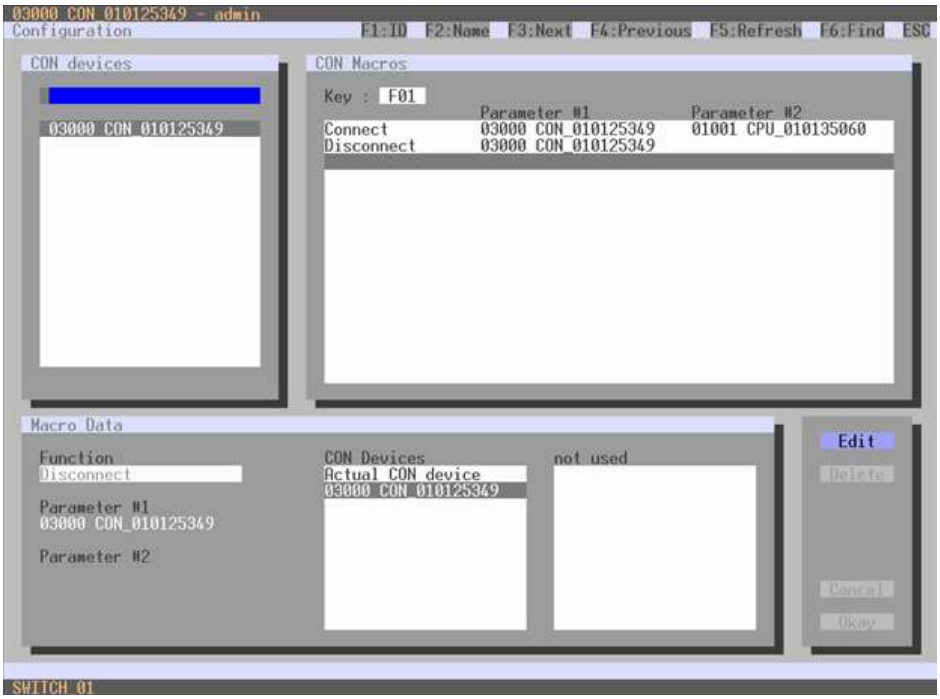

Figure 61. Setting Up Console Macros through the OSD

To create a macro for a console, proceed as follows:

1. Select a console in the **CON devices** list.
2. Select a keyboard function key (F1 to F16) in the **Key** field to be used to invoke the macro.
3. Select the position in the macro list (1-16) where the macro command is to be inserted.
4. Click the **Edit** button to activate the **Function** field, and select the desired function by pressing the keyboard up and down arrow keys.
5. Press the Tab key to select the appropriate parameters **P1** and **P2** (e.g. CON Devices or CPU Devices) for the selected macro command.
6. Pressing the keyboard <Enter> key will confirm the current command and add it to the macro list. Repeat the process to add additional commands to the macro as necessary.

Setting up Console Macros through the Java Tool

➔ Select **Definition > CON Devices** in the Task area, then select a console in the **CON Devices** list and click the **Macros** tab to open it.

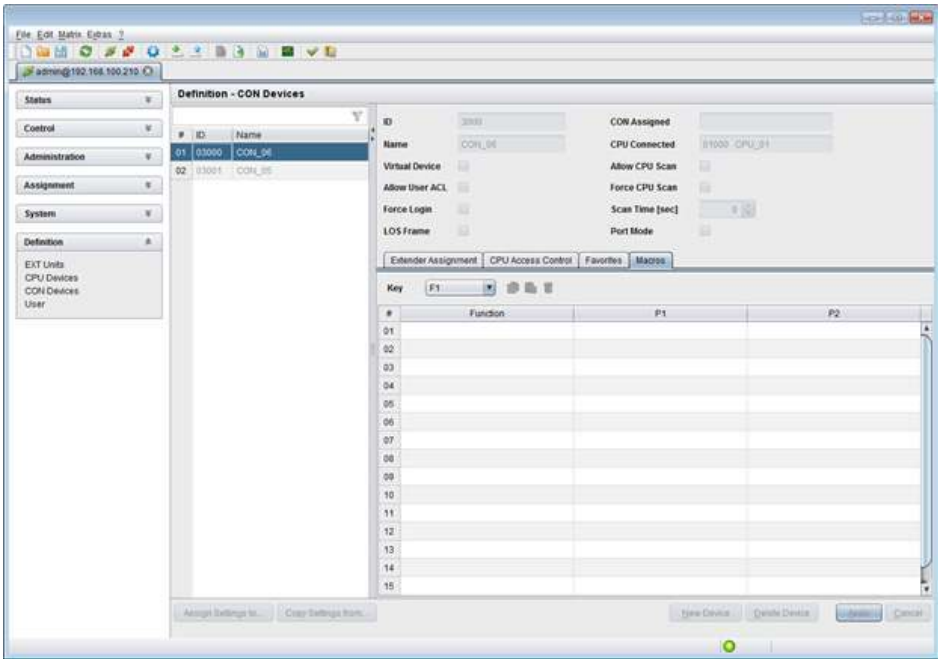

Figure 62. Setting up Console Macros through the Java Tool

To create a macro for the selected console, proceed as follows:

1. Select a keyboard function key (F1 to F16) in the **Key** field to be used to invoke the macro.
2. In the **Function** column, select the action that should be part of the macro. The selection list is opened by a double click on an empty field.
3. Select in the **P1** and **P2** columns the appropriate parameters for the macro function (e.g. consoles and CPUs).
4. Confirm the inputs by clicking the **Apply** button.

For convenient macro configuration, the following context functions are available:

➔ To assign a console's macros to other consoles, click on the console, then click the **Assign Settings to ...** button (located below the CON devices list). Select **Macros** from the pop-up list of settings, and then click **Next**. Select the consoles to receive the macros from the list of available consoles and click the **>** button to add those consoles to the Assign settings to… list. Click **Finish** to complete the macro assignments. The **Copy Settings from ...** button functions similarly, except the console to receive macros is selected first.

➔ All the macro commands of a selected key can be copied into the cache by clicking the **Copy Key Macros** icon to the right of the function key selector. These macros can then be pasted into a different key by selecting the key and clicking the **Paste Key Macros** icon. All macros of a selected key can be removed by clicking the **Delete Key Macros** icon.

Parallel Operation

Parallel operation means control of a CPU Device by keyboard and mouse is allowed to pass from one CON Device to another concurrently connected Con Device. A CPU Device can never be controlled by more than one CON Device at a given time, but control can pass from the controlling CON Device after a specified period of keyboard and mouse inactivity. Mouse or keyboard activity by may also be used to take control.

Parallel operation functions most smoothly when identical mice and keyboards are used, and when they are connected to the same USB-HID ports on each CON Unit.

If control is passed within 10 s, any linked USB 2.0 / 3.0 extenders will not be switched, for safety and stability.

An alternative to this approach is USB-HID Ghosting, described in the Keyboard Commands topic of the Operations section.

Parallel Operation can be configured in the OSD and the Java Tool.

Setting Up Parallel Operation through the OSD

➔ Select **Configuration > Switch** in the main menu.

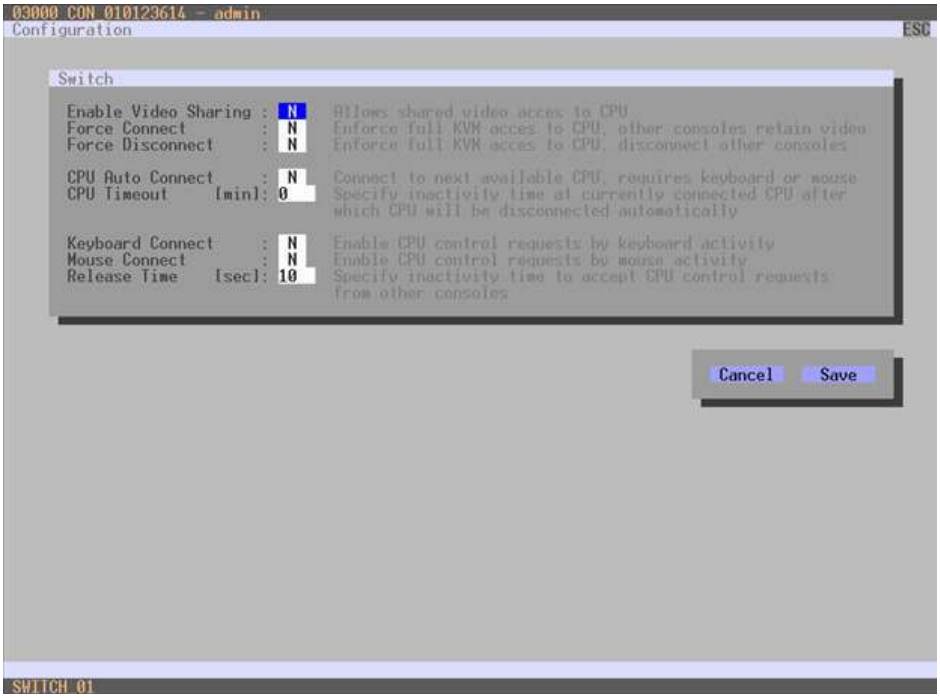

Figure 63. Setting Up Parallel Operation through the OSD

In order to configure parallel operation through the OSD, proceed as follows.

1. Activate the **Enable Video Sharing** function.
2. Activate the **Force Connect** function.
3. Activate the **Keyboard Connect** function, if taking control by a keystroke is to be enabled.
4. Activate the **Mouse Connect** function, if taking control by mouse movement is to be enabled.
5. Set the desired inactivity **Release Time** (0 - 999 sec.), after which control can pass to another Con device.

Setting Up Parallel Operation through the Java Tool
➔ Select **System > Switch** in the task area.

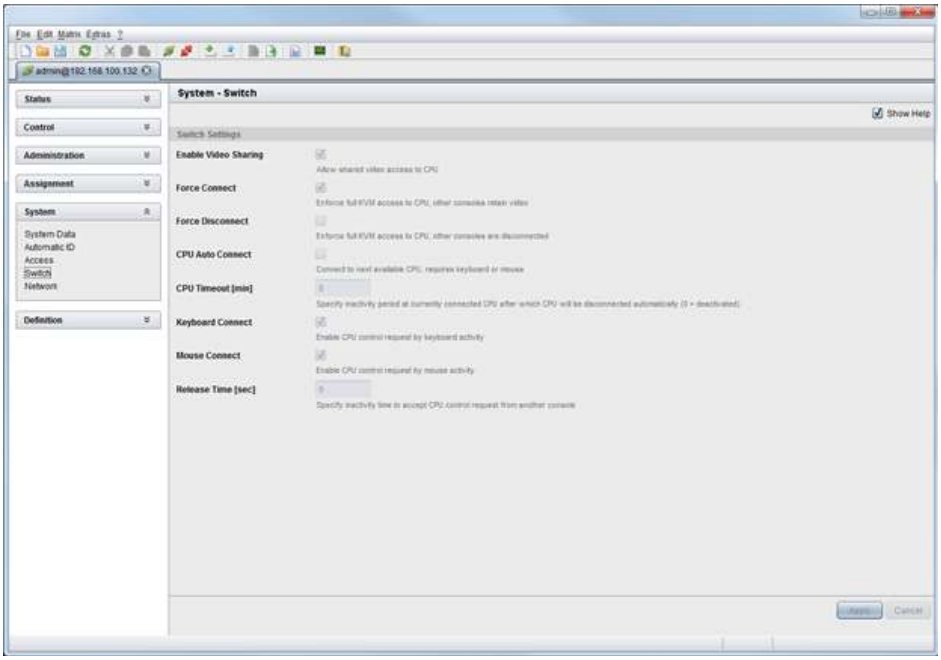

Figure 64. Setting Up Parallel Operation through the Java Tool

In order to configure parallel operation through the Java Tool, proceed as follows.

1. Activate the **Enable Video Sharing** function.
2. Activate the **Force Connect** function.
3. Activate the **Keyboard Connect** function, if taking control by a keystroke is to be enabled.
4. Activate the **Mouse Connect** function, if taking control by a mouse movement is to be enabled.
5. Set an inactivity **Release Time** (0 - 999 sec.), after which control can be taken over.

Multi-Screen Control

CON devices with more than one assigned video display can be configured to use Multi-Screen Control. This feature allows switching between up to four CPU devices by simply moving the mouse cursor beyond the edge of the current display to an adjacent display. Multi-Screen switching can also be done with keyboard commands. The monitors can be arranged side-by-side in a 1 x 4 array, or in a 2 x 2 grid layout.

The Extender Units assigned to the multi-display CON Device must be physically connected to the same block of four ports on a matrix I/O board, in order for the Con Device to be eligible for Multi-Screen Control.

When using CPU devices with multi-head video output (e.g. dual-head), switching should only be done via keyboard commands, or the stability of the system may be impaired. CON Units with the ability to connect a local source (computer, CPU) will have switching to the local source disabled if used in a Multi-Screen Control environment.

This screen can be accessed from the OSD and the Java Tool.

Setting Up Multi-Screen Control through the OSD

➔ Select **Assignments > Multi-Screen Control** in the main menu.

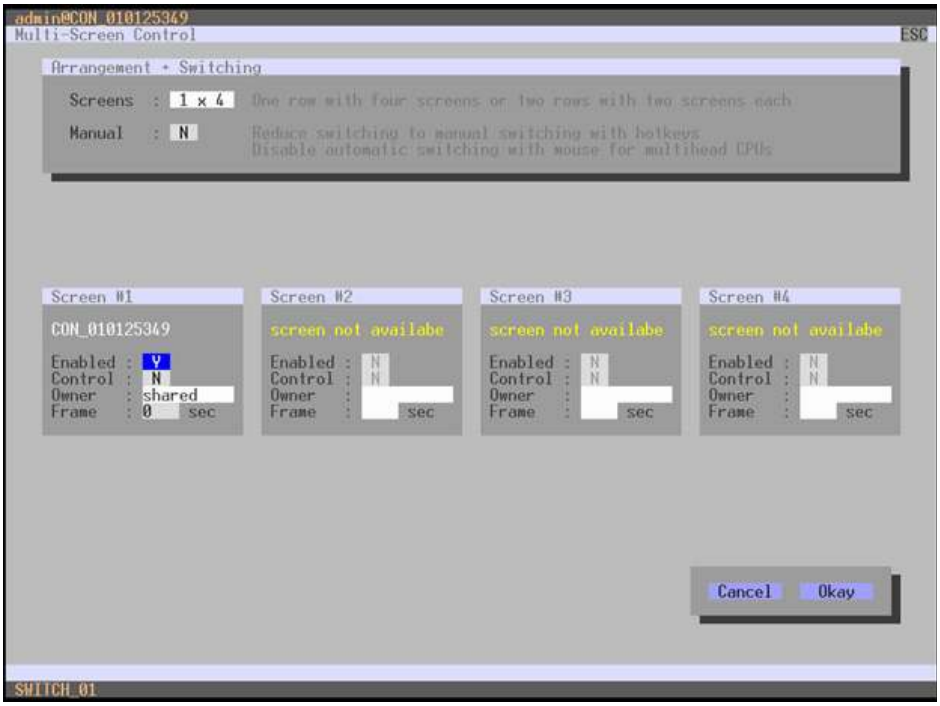

Figure 65. Setting Up Multi-Screen Control through the OSD

To configure Multi-Screen Control through the OSD, proceed as follows.

1. Select the desired configuration layout for the CON Device in the **Arrangement** field (1 x 4 or 2 x 2). The fields for the configuration of the individual displays will be arranged accordingly.
2. Activate the **Manual** option if switching is to be restricted to keyboard commands. More information on this is in the Multi-Screen Control topic of the Operations section. Manual switching should be used when multi-head CPU devices are in use.
3. Ensure that the **Enabled** option is set to **Y** on all displays in order to include them in Multi-Screen Control.
4. Select one or more **Control** displays within the CON Device by setting the **Control** function to **Y** in the display field. Control displays are those extender units within the Multi-Screen Control that have a keyboard and mouse connected. These extender units have the ability to control the Multi-Screen setup through the connected keyboard and mouse.
5. The **Owner** function is used to designate a control display that will own the Multi-Screen setup, in that its attached keyboard and mouse will be used to switch between the displays. Enable the **Owner** function on that display from the list of screens. To make a display accessible to all neighboring control displays, set the **Owner** function to **shared**.
6. Use the **Frame** function to configure a red frame that shows the current display with mouse control after the expiration of a selectable timer. The frame to fade in can be individually activated by using a timer value greater than 0 seconds.

Setting Up Multi-Screen Control through the Java Tool
➔ Select **Assignment > Multi-Screen Control** in the task area.

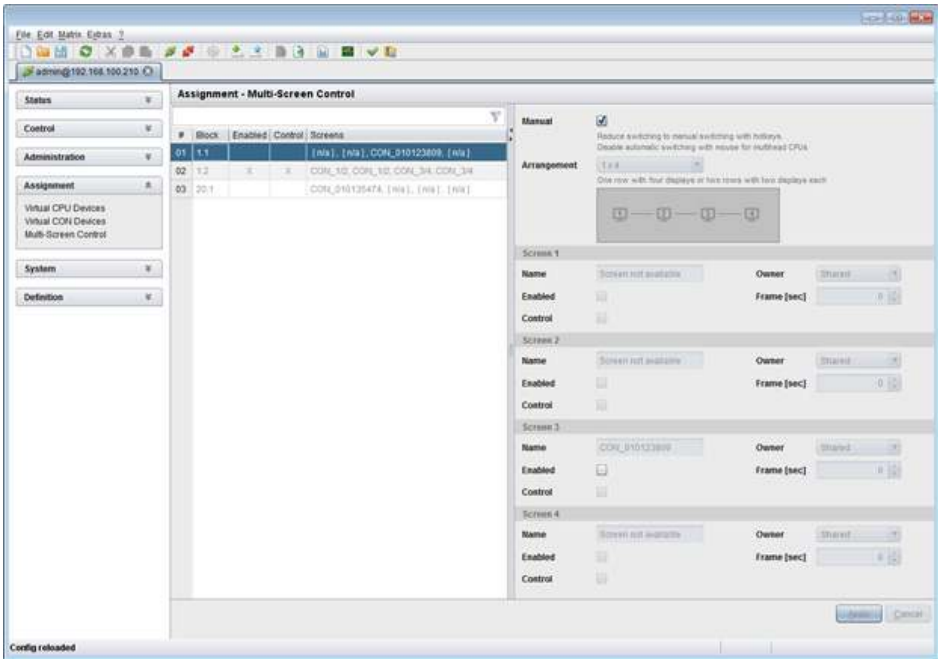

Figure 66. Setting Up Multi-Screen Control through the Java Tool

To configure Multi-Screen Control through the Java Took, proceed as follows.

1. Select the block of four ports in the working area list that should be configured for Multi-Screen Control. Only blocks of four ports that contain at least one CON Unit are shown.
7. Activate the **Manual** option if USB-HID switching is to be restricted to keyboard commands. More information is in the Multi-Screen Control topic of the Operations section. Manual switching should be used when multi-head CPU devices are in use.
2. Select the desired configuration layout for the CON Device in the **Arrangement** field (1 x 4 or 2 x 2). The fields for the configuration of the individual displays will be arranged accordingly.
3. Select one or more control displays within the CON Device by setting the **Control** function to **Y** in the display field. Control displays are those extender units within the Multi-Screen Control that have a keyboard and mouse connected. These extender units have the ability to control the Multi-Screen setup through the connected keyboard and mouse.
4. The **Owner** function is used to designate a control display that will own the Multi-Screen setup, in that its attached keyboard and mouse will be used to switch between the displays. Enable the **Owner** function on that display from the list of screens. To make a display accessible to all neighboring control displays, set the **Owner** function to **shared**.
5. Use the **Frame** function to configure a red frame that shows the current display with mouse control after the expiration of a selectable timer. The frame to fade in can be individually activated by using a timer value greater than 0 seconds.

Saving and Loading of Configurations

The menus described in this section provide a variety of ways to save and recall configurations, whether currently active configurations, internally stored configurations, or configurations saved on media external to the Orion XC equipment.

Active Configuration

This menu can only be accessed in the OSD.

➔ Select **Configuration > Save** in the main menu.
By selecting this menu item, the admin user can save the active configuration of the matrix to its non-volatile memory. By default, the last configuration saved in this way is restored as the active configuration after a restart of the matrix.

Changing or saving configurations will block the matrix memory briefly, resulting in a freeze of all OSD menus for a few seconds. The connections between consoles and CPUs are not affected.

If **Auto Save** is activated in the **Configuration > System** settings, an additional automatic saving of the configuration will be performed periodically.

Saving of Configurations (internal)

This menu allows specifying a predefined internal storage location for saving the active configuration. This does not replace the buffering of the Active Configuration described above. The menu can be accessed from the OSD and the Java Tool.

Saving the Configuration to Internal Storage through the OSD

It is possible to save the created configuration to eight storage locations in the matrix (**File #1 - File #8**). The configuration can also be saved as default configuration, to be restored whenever the matrix restarts.

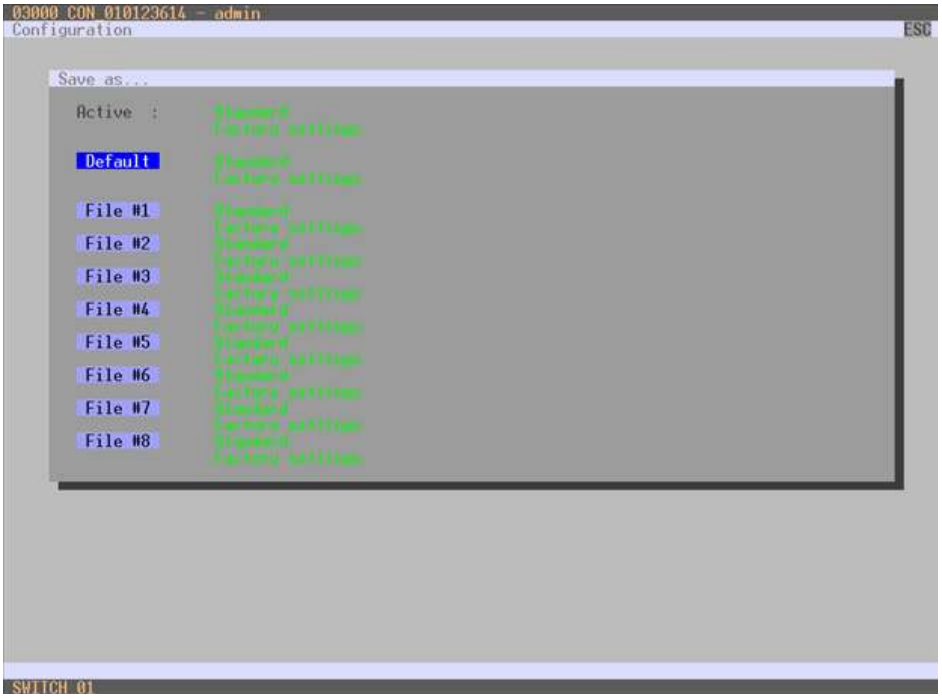

Figure 67. Saving Internal Configuration through the OSD

Active shows the current configuration's name and information. This is the configuration to be saved.

In **Default** and **File #1** to **File #8**, the name and information records of the respective saved configuration are shown. Each of these storage locations can be overwritten. The configuration stored in the **Default** location will become the default configuration.

The storage location to be overwritten by the current configuration must be selected explicitly.

The current configuration is then saved to this storage location. The previously saved configuration at that storage location is deleted.

To save the configuration into an internal matrix memory location, proceed as follows:

1. Select **Configuration > Save As…** in the main menu.
2. Select the desired storage location (**File #1** – **File #8,** or **Default)**.
3. Save the configuration by pressing the keyboard <Enter> key.

Saving Internal Configuration through the Java Tool

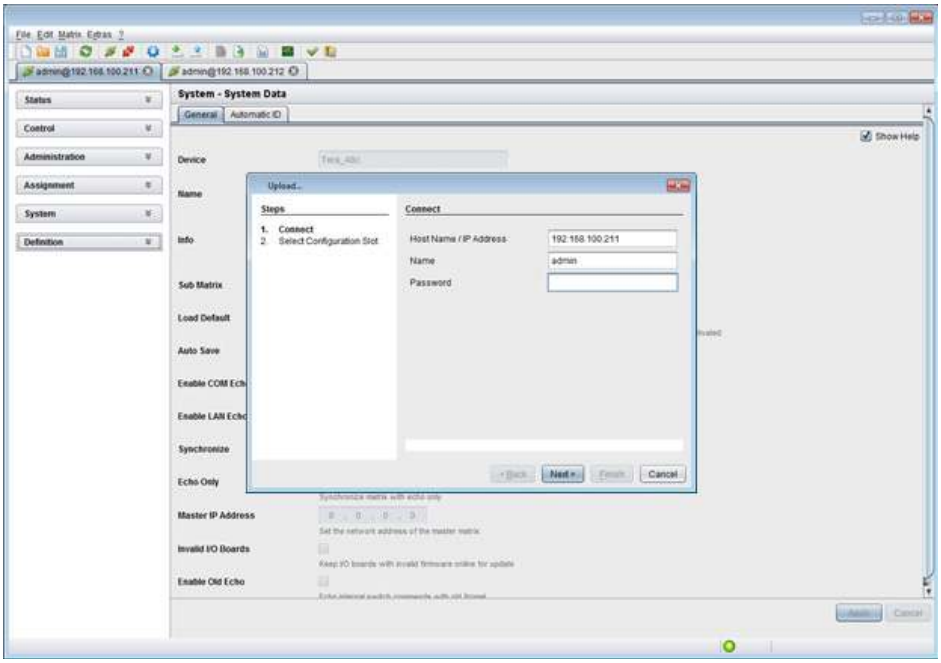

Figure 68. Saving Internal Configuration through the Java Tool

To save the configuration into the internal matrix memory, proceed as follows:

1. Select **File > Upload** in the menu bar.
2. Enter the IP address of the matrix, your user name and password and confirm the inputs with the **Next** button.
3. Select the storage location in which the configuration is to be saved (**default,** or **config01** - **config08**) and confirm with the **Finish** button.

Loading of Configurations (internal)

In this menu Configurations previously saved to internal memory are loaded to become the active configuration. This menu can be accessed from the OSD and the Java Tool.

Loading Internal Configuration through the OSD

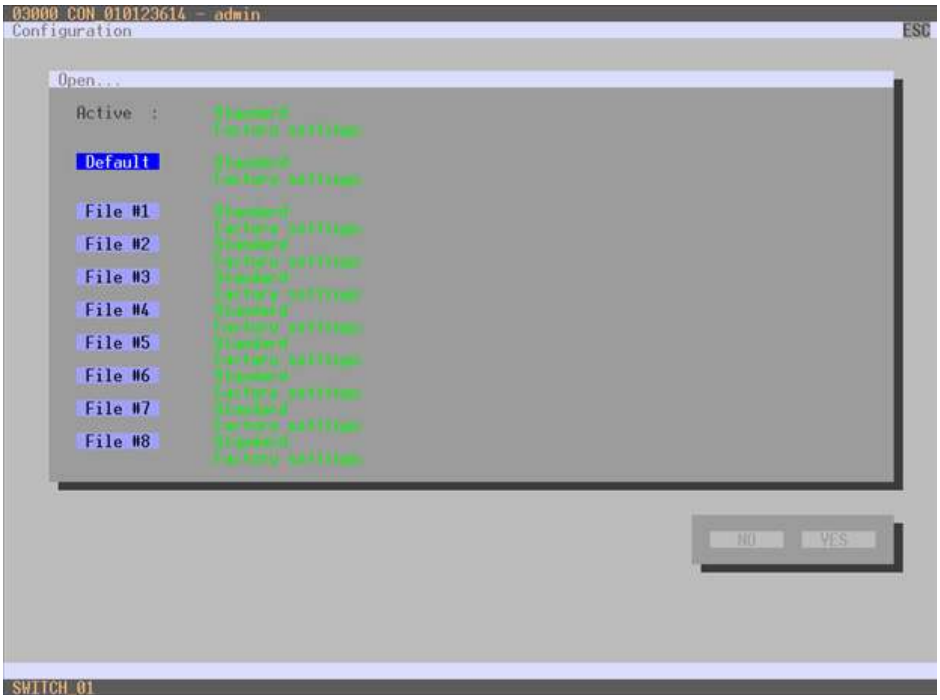

Figure 69. Loading Internal Configuration through the OSD

Active shows the current configuration's name and description. In addition to the default configuration, eight other configurations can be loaded.

Select the configuration to be loaded from the nine locations. The selected configuration is immediately loaded and displayed in the menu as **Active**.

To load the configuration from the internal matrix memory, proceed as follows:

1. Select **Configuration > Open** in the main menu.
2. Select the desired configuration.
3. Load the configuration by pressing the <Enter> key.

Loading Internal Configuration through the Java Tool

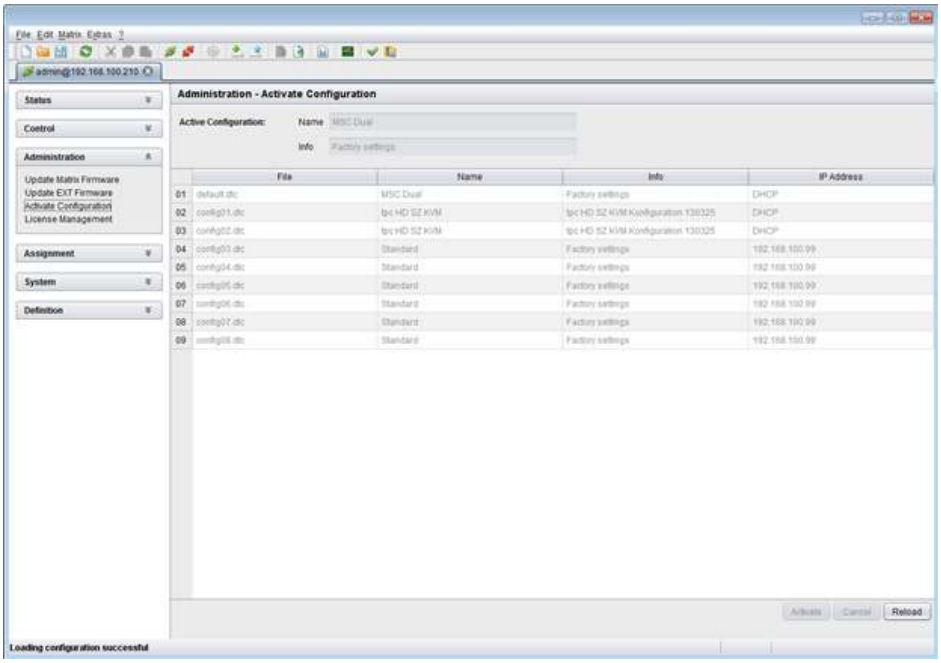

Figure 70. Loading Internal Configuration through the Java Tool

To load the configuration from the internal matrix memory, proceed as follows:

1. Select **Administration > Activate Configuration** during online-mode in the task area.
2. Select the required configuration.
3. Load the configuration by pressing the **Activate** button.

Saving of Configurations (External)

Configurations can also be saved as files which are stored outside of the matrix. This menu can only be accessed from the Java Tool.

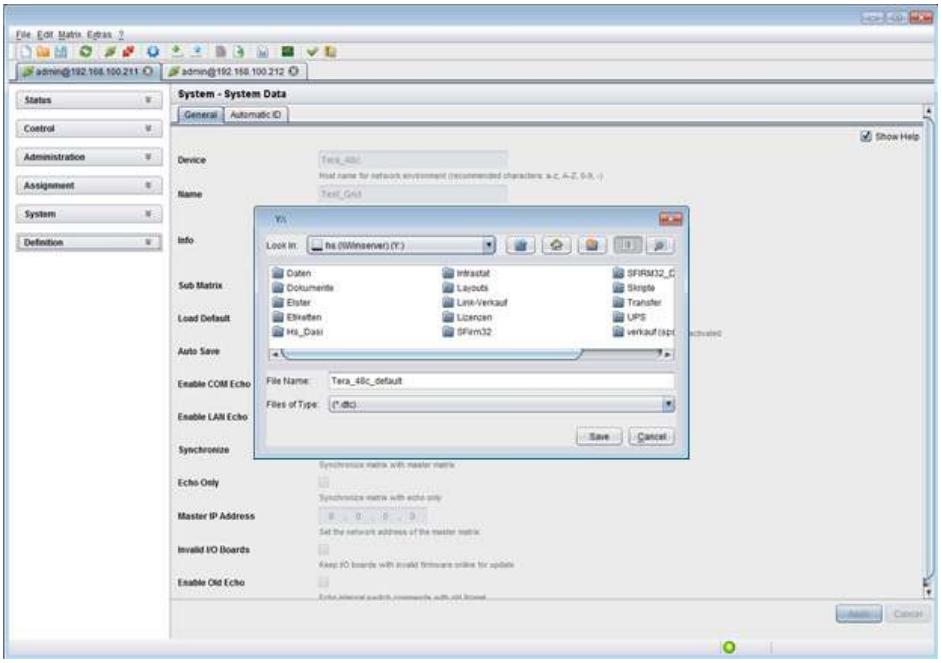

Figure 71. Saving External Configuration through the Java Tool

To save the active configuration as an external configuration file, proceed as follows:

1. Select **File > Save As** in the menu bar.
2. Enter a legal file name for the configuration.
3. Select the directory on the storage medium where it is to be saved.
4. Click the Save button.

Configurations are always saved in a file with the extension “dtc”.

Loading of Configurations (external)

Externally saved configurations are opened and activated in this menu. This menu can only be accessed in the Java Tool.

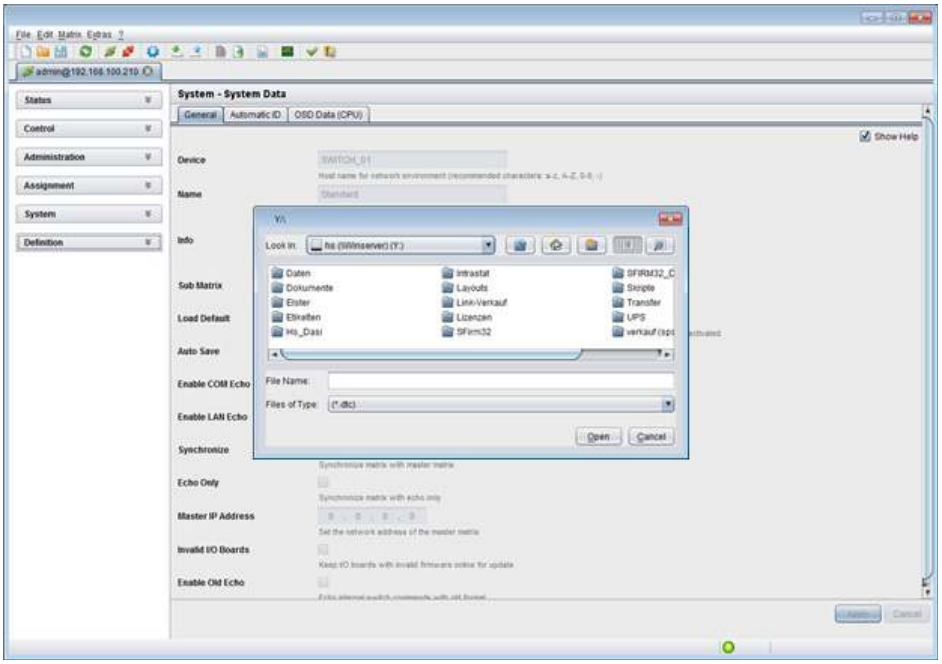

Figure 72. Loading external configuration through the Java Tool

To load an external configuration file, proceed as follows:

1. Select **File > Open…** during offline-mode and select the storage location of the configuration file that is to be opened.
2. Open the configuration by clicking the **Open** button.
3. Select **File > Upload** in the menu bar to transfer the opened configuration to the matrix. Enter the necessary parameters.
4. Select **Matrix > Connect** in the menu bar to make a connection between the matrix and the Java tool. Enter the necessary parameters.
5. Select **Administration > Activate Configuration** and select the configuration that has to be activated.
6. Confirm the process with the **Activate** button.

The opened configuration has now been uploaded and activated.

Export and Import Options

The Orion XC offers the option to export configuration lists (extender, CPUs, consoles and users) for external editing. The files can then be imported into the matrix configuration through the Java tool.

Exported configuration lists are always saved as .csv files for ease of offline editing with common spreadsheet applications.

Import and Export of configuration lists are only available through the Java Tool.

Export Options

Configuration lists are exported in this menu.

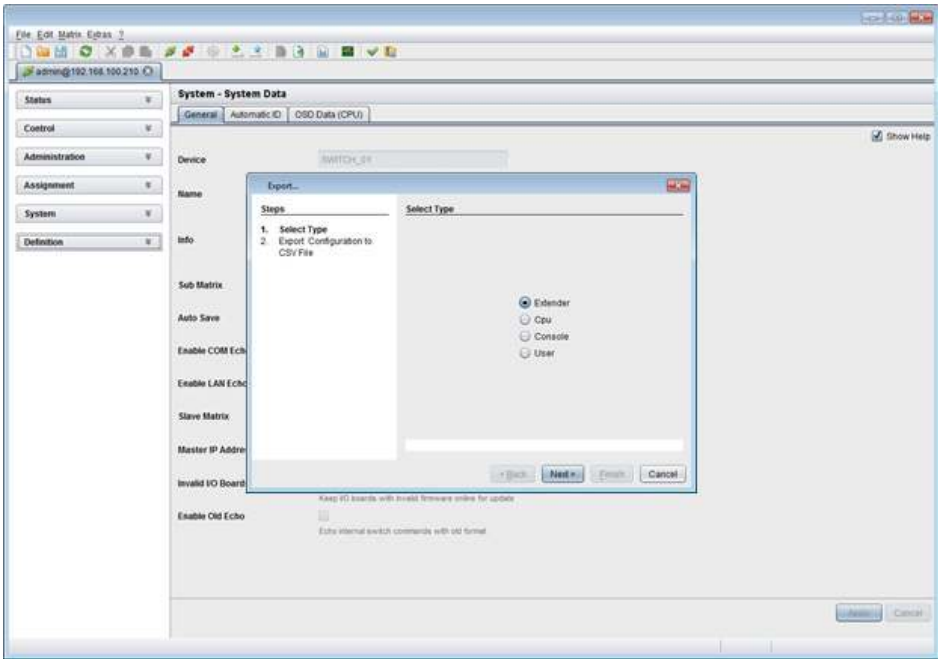

Figure 73. Exporting Configuration Lists through the Java Tool

To export, proceed as follows:

1. Select **File > Export** in the menu bar.
2. After opening the menu, select the list to export (**Extender, CPU, Console** or **User**).
3. Select the storage location and a name for the export file.
4. Confirm the export with the **Finish** button.

Import Options

Configuration lists are imported in this menu.

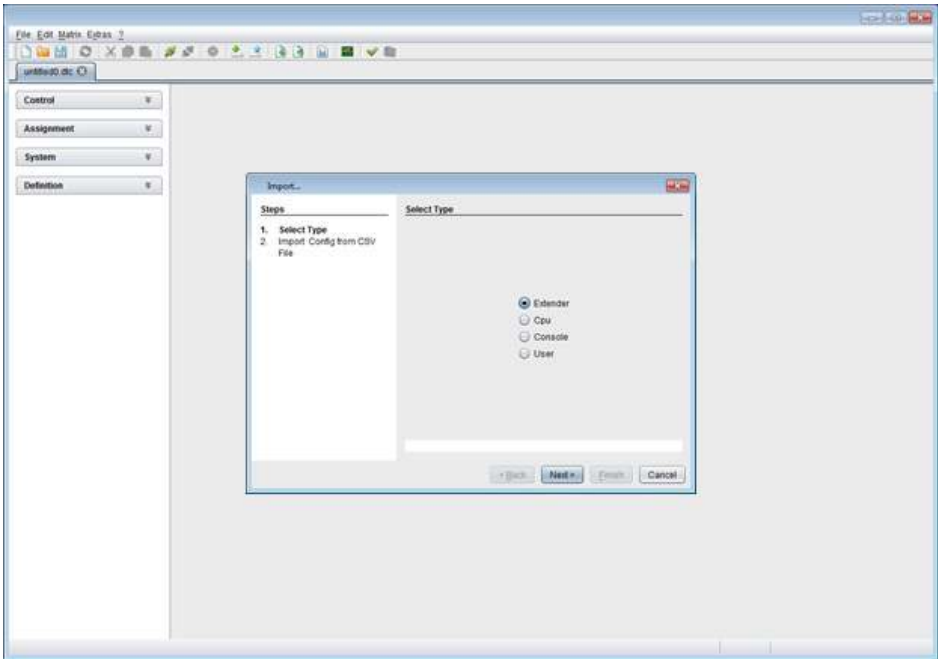

Figure 74. Importing Configuration Lists through the Java Tool

To import, proceed as follows:

1. Select **File > Import** in the menu bar.
2. After opening the menu, select the list to import (**Extender, CPU, Console** or **User**).
3. Select the directory of the list to import.
4. Confirm the import with the **Finish** button.

Note: Importing configuration lists is only possible with offline configurations.

Matrix Cascading

Cascading allows a switchable connection to be established between two matrix switches through Tie Lines. This kind of configuration may useful when the number of ports in the entire system needs to be increased, or when certain important connections should be distributed to several matrix switches for redundancy.

The Tie Lines are unidirectional and can only be used in one direction according to their configuration. For bidirectional cascading, Tie Lines have to be set up in opposite directions. To use Tie Lines between matrix switches, Master/Slave CON devices and Master/Slave CPU devices must be created for switching within the cascaded environment.

Matrix Cascading does not require Firmware Bundle 4.

Matrix Cascading can be configured with the OSD or the Java Tool.

General Preparation:

1. Define a **Master Matrix**. All other connected matrix switches will be configured as **Sub Matrices** in the configuration process.
2. Tie Lines must not be connected until the configuration process is completed.

Setting Up Matrix Cascading through the OSD

➔ Select **Configuration > EXT Units** in the main menu of the master matrix.

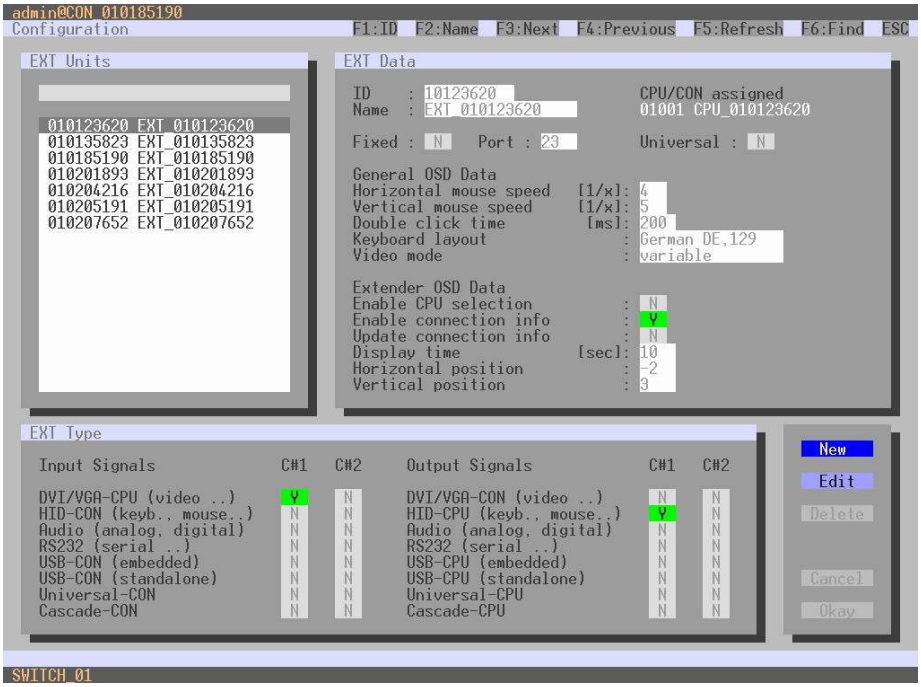

Figure 75. Setting Up Matrix Cascading Through the OSD

1. Press the **New** button. A new Extender Unit that is to be connected with Tie Lines will be created.
2. Enter an appropriate extender name in the **Name** field.
3. Enter a port number in the **Port** field based where the Tie Line is to be connected.
4. If the Tie Line's direction is to be from the Sub Matrix to the Master Matrix, set the **Cascade-CON** option to **Y** (**C#1**) in the **Input Signals** column. If the Tie Line's direction is to be from the Master Matrix to the Sub Matrix, set the **Cascade-CPU** option to **Y** (**C#1**) in the **Output Signals** column.
5. Save the settings by pressing the **Okay** button.
6. If a Master/Slave CON Unit was created, select **Configuration > CON Devices** in the main menu of the master matrix and press the **New R** button. A switchable CON Device will be created.
7. If a Master/Slave CPU Unit was created, select **Configuration > CPU Devices** in the main menu of the master matrix and press the **New R** button. A switchable CPU Device will be created.
8. Enter an appropriate Device name in the **Name** field.
9. Assign the previously configured Extender Unit to the newly created Device by moving the Unit's definition from the **Ext available** field to the **Ext assigned** field and save the settings.
10. Select **Configuration > EXT Units** in the main menu of the Sub matrix, and repeat steps 1 to 9 for the Sub Matrix.
11. Select **Configuration > System** in the main menu of the Sub Matrix and set the **Sub Matrix** option to **Y**. The OSD of the Sub Matrix will immediately freeze and will be only accessible by using the keyboard command <'Hot Key'>, <s>, <o>.
12. Restart all I/O boards on which any Master/Slave CON or CPU Units have been configured, or alternatively restart the matrix switches.
13. Connect the Tie Lines to the matrix switches. Ensure that each **Master/Slave CON** on one matrix is connected to the **Master/Slave CPU** on the other matrix to achieve the ability to switch between the two matrices.

The Matrix Cascading is now configured and ready be used. Additional Tie Lines can be configured as needed. The use of cascading is described in the Operations section.

Setting Up Matrix Cascading through the Java Tool

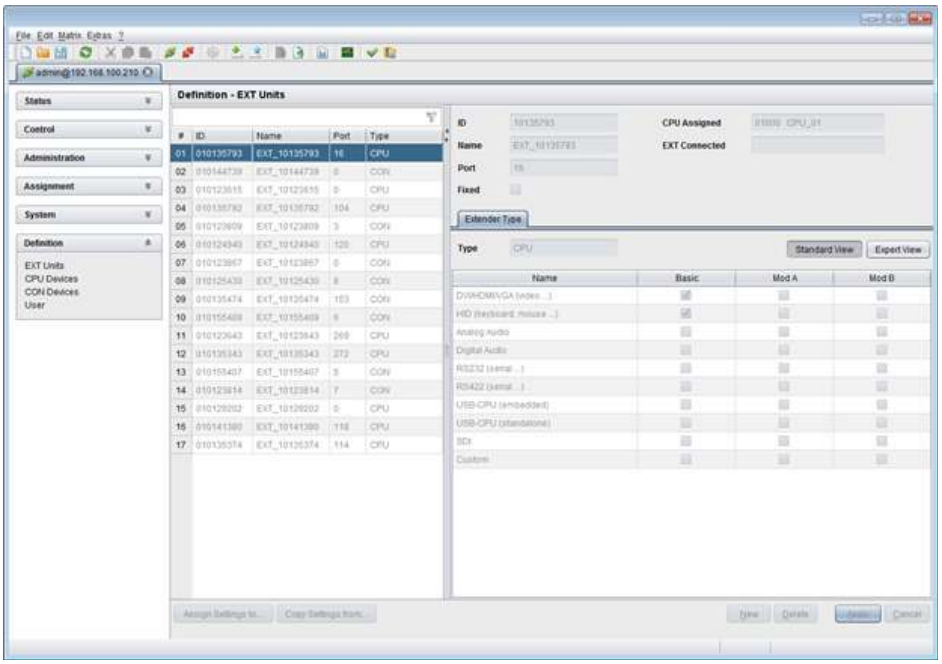

Figure 76. Setting Up Matrix Cascading Through the Java Tool

1. Connect to the Master Matrix and then select Activate Online Configuration Mode.
2. Select **Definition > EXT Units** in the task area and click the **New** button. This opens a popup window.
3. If the Tie Line should be directed from the Sub Matrix to the Master Matrix, select **Cascading CON Unit** in the **Choose Extender Type** selection box. On the other hand, if the Tie Line should be directed from the Sub Matrix to the Master Matrix, select **Cascading CPU Unit** in the **Choose Extender Type** selection box.
4. Enter an appropriate extender name in the **Name** field.
5. Enter the port number where the Tie Line is to be connected into the **Port** field.
6. Confirm the settings by clicking the **Apply** button.
7. If a Cascading CON Unit was created, select **Definition > CON Devices** in the task area of the master matrix and press the **New** button. A switchable CON Device will be created.
8. If a Cascading CPU Unit was created, select **Definition > CPU Devices** in the task area of the Master Matrix and press the **New** button. A switchable CPU Device will be created.
9. Enter an appropriate name for the extender into the **Name** field.
10. Assign the previously configured Extender Unit to the newly created Device by moving the Unit's definition from the **Extender available** field to the **Extender assigned** field, and save the settings by pressing the **Apply** button.
11. Connect to the Sub Matrix and select Activate Online Configuration Mode. Repeat steps 1 to 10.
12. Select **System > System Data** in the task area of the Sub Matrix and activate the **Sub Matrix** option. The OSD of the Sub Matrix will be only accessible by using the keyboard command <'Hot Key'>, <s>, <o>.
13. Restart all I/O boards on which any Cascading CON or CPU Units have been configured, or alternatively restart the matrix switches.
14. Now connect the Tie Lines to the matrix ports. Ensure that each **Cascading CON** on one matrix is connected to a **Cascading CPU** on the other matrix to achieve the ability to switch between the two matrices.

The Matrix Cascading is now configured and can be used. Additional Tie Lines can be configured as needed. The use of cascading is described in the Operations section.

Matrix Grid

The Matrix Grid screen is used to specify a configuration of two or more connected matrix switches. This may be necessary if the total number of ports in the entire system needs to be increased, or if certain important connections should be distributed to several matrix switches for redundancy.

The connections between two matrix switches are established through Grid Lines that are that serve as connecting links between particular I/O ports. The Grid Lines can be bi-directional, and each can handle a full access connection of a CON Device to a CPU Device.

The number of Grid Lines in the system determines whether a CON Device can be switched to a CPU Device with Non-Blocking Access or with Blocking Access. This has to be determined separately for each Grid environment. Non-Blocking Access means that a Grid Line for a cross-matrix switching operation of a CON Device to a CPU Device is available at any time. Blocking Access means that for a specific switching operation, no Grid Line may be available due to the switching status within the Grid. The result will be that cross-matrix switching may not be possible.

The Matrix Grid can be configured through the OSD or the Java Tool.

Administration of Settings
Within a Matrix Grid, some settings may apply only to the individual matrix switch and others are global settings that apply to the whole Matrix Grid.

The settings in the following screens have to made separately for each matrix (local settings), or within the master matrix (the Grid Master) to affect all matrix switches in the Grid (global setting):

System, **Access**, **Switch**, **Network**, **Date + Time**, **SNMP**, **Matrix Grid**, **Multi-Screen Control**

The settings in the following screens have to be made globally once within the Matrix Grid:

EXT Units, **CPU Devices**, **CON Devices**, **User**, **CON Macros**, **User Macros**, **CON Favorites**, **User Favorites**, **Virtual CPU Devices**, **Virtual CON Devices**

If global settings are made in the respective menus, they will be immediately available on each matrix within the Matrix Grid.

General Preparation
The following conditions must be met before starting the Matrix Grid configuration:

1. The Matrix Grid function (Bundle 4) must be activated by license key on all matrix switches to be connected to the Grid. License keys and bundles are described in detail later in this section.
2. Firmware Revision V03.10 must be installed on all matrix switches that are to be connected to the Grid.
3. All matrix switches to be connected to the Grid must be within the same TCP/IP network.
4. Port 5556, which is needed for network communication, must not be blocked by a firewall.

Setting Up a Matrix Grid through the OSD

In order to configure a Matrix Grid, proceed as follows. The following configuration steps have to be repeated for each matrix switch in the grid separately.

1. Select **Configuration > System** in the main menu.

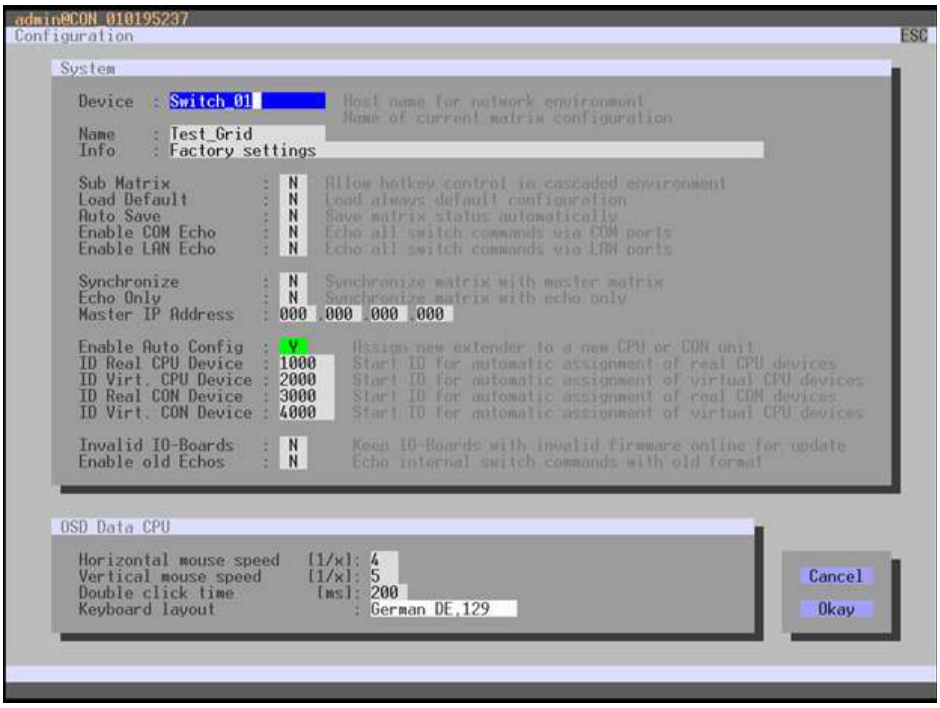
admin@CON 010195237
Configuration
ESC
System
Device : Switch_01
Host name for network environment
Name : Test_Grid
Name of current matrix configuration
Info : Factory settings
Sub Matrix : N
Allow hotkey control in cascaded environment
Load Default : N
Load always default configuration
Auto Save : N
Save matrix status automatically
Enable COM Echo : N
Echo all switch commands via COM ports
Enable LAN Echo : N
Echo all switch commands via LAN ports
Synchronize : N
Synchronize matrix with master matrix
Echo Only : N
Synchronize matrix with echo only
Master IP Address : 000 .000 .000 .000
Enable Auto Config : Y
Assign new extender to a new CPU or CON unit
ID Real CPU Device : 1000
Start ID for automatic assignment of real CPU devices
ID Virt. CPU Device : 2000
Start ID for automatic assignment of virtual CPU devices
ID Real CON Device : 3000
Start ID for automatic assignment of real CON devices
ID Virt. CON Device : 4000
Start ID for automatic assignment of virtual CPU devices
Invalid IO-Boards : N
Keep IO-Boards with invalid firmware online for update
Enable old Echos : N
Echo internal switch commands with old format
OSD Data CPU
Horizontal mouse speed [1/x]: 4
Vertical mouse speed [1/x]: 5
Double click time [ms]: 200
Keyboard layout : German DE,129
Cancel
Okay

Figure 77. Setting Up a Matrix Grid through the OSD - Step 1

2. Enter into the **Device** field a unique name for the Matrix switch itself. No two matrix switches within the Matrix Grid can use the same name.
3. Enter a name for the Grid into the **Name** field. The identical Grid name must be used in each matrix within the Grid. Confirm these name choices by clicking the Okay button.
4. Select **Configuration > Matrix Grid** in the main menu.

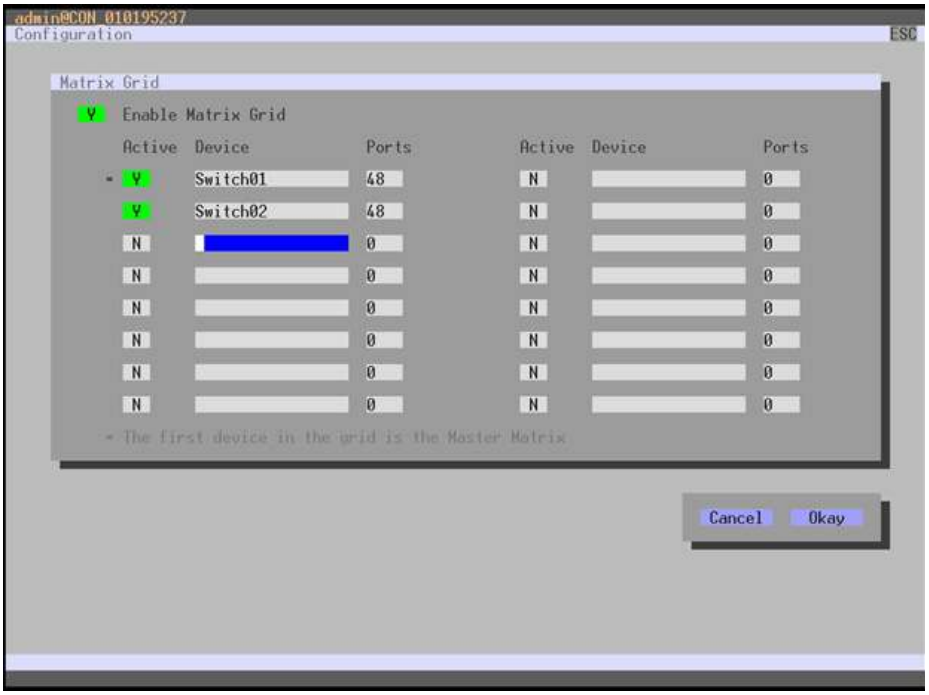

Figure 78. Setting Up a Matrix Grid through the OSD - Step 2

5. Activate the **Enable Matrix Grid** function.
6. Enter the device names of each matrix in the Grid into the Matrix Grid list, starting in the left column. A Grid Master will be automatically selected for the Matrix Grid. The closer a matrix is to the top of the list, the more likely it is to be considered in the selection process, if certain criteria like system availability are met.
7. Activate each matrix in the Matrix Grid list by changing its setting in the **Active** column to **Y**.
8. Enter the number of chassis ports for each matrix (**8**, **16**, **32**, **48**, **64** or **80**).
9. Select Okay to confirm, and restart all matrix switches, beginning with the master matrix.

The Matrix Grid is now available, and offers the option of cross-matrix switching of CON Devices to CPU Devices.

Setting Up a Matrix Grid through the Java Tool

➔ To set up the Matrix Grid in the Java Tool, execute the configuration wizard in the **System > Matrix Grid** screen. It will guide the user through the configuration of Matrix Grids.

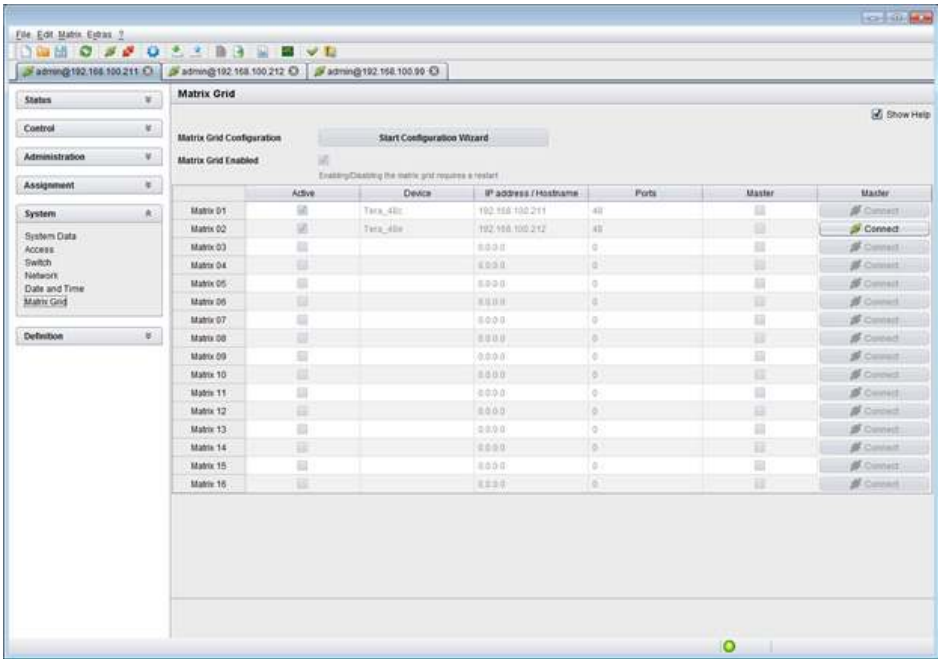

Figure 79. Setting Up a Matrix Grid through the Java Tool

Firmware Update

This topic includes updating the firmware on the Orion XC matrix and the extenders connected to it. Firmware update is only available through the Java Tool.

Matrix Update

The firmware of the Orion XC can be updated in this screen. Matrix Update can only be performed through the Java Tool.

Notes:

- Only use stand-alone computers that are not connected as CPU devices to the matrix to update the matrix firmware.
- Ensure that the computer used for the update cannot go into standby mode or sleep mode during the update.
- Ensure that the current configuration has been saved externally before the update is started.
- For reasons of network stability, firmware update via WLAN is not recommended.

Preparation

Take the following steps in order to prepare for the matrix update:

1. Save the matrix configuration externally.
2. Open **Extras > Options** in the menu bar, and enter the path to the firmware update files in the **Firmware Directory** setting. Click the Ok button to confirm the path.
3. Put any spare boards into unused slots in the matrix.
4. If the Syslog function has been unlocked with a license key, activate it to monitor the update.

Ensure that all USB 2.0 extenders are only connected to their assigned ports (fixed ports) before the matrix update is started, or the stability of the update may be affected.

Performing the Update

To perform the matrix update, proceed as follows:

1. Select **Administration > Update Matrix Firmware** in the task area. All updateable components of the matrix will be automatically selected and highlighted in green

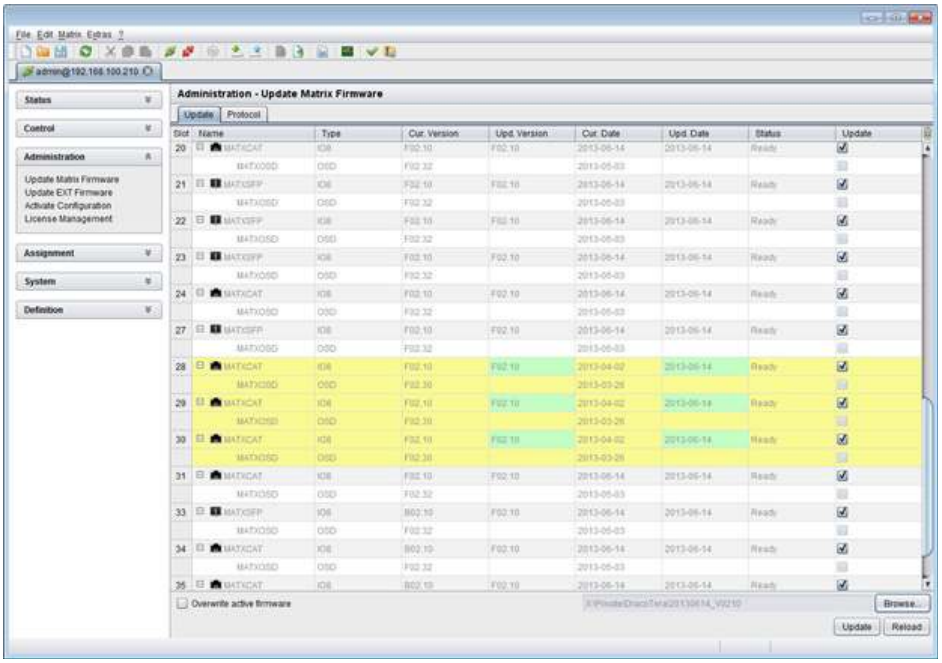

Figure 80. Matrix Update through the Java Tool

2. Start the update by clicking the **Update** button.
3. Restart the Matrix after the update by pressing the **Reload** button in the lower part of the working area.

For a complete initialization of the matrix, a cold start (power cycle) is recommended.

Extender Update

The firmware of the extenders connected to the matrix can be updated in this screen. Extender update can be performed only in the Java Tool.

Preparation

Take the following steps in order to prepare for the extender update.

1. Save the matrix configuration externally.
2. Open **Extras > Options** in the menu bar, and enter the path to the firmware update files in the **Firmware Directory** setting. Click the Ok button to confirm the path.
3. Connect all spare extenders to the matrix.

Note: To preserve network stability, the extender update should not be performed over a WLAN.

Performing the Update in Standard Mode (Parallel Update)

1. Select **Administration > Update EXT Firmware** in the task area. The standard mode for parallel update will be selected by default, and the **Upload Firmware (Step 1)** tab will be opened.

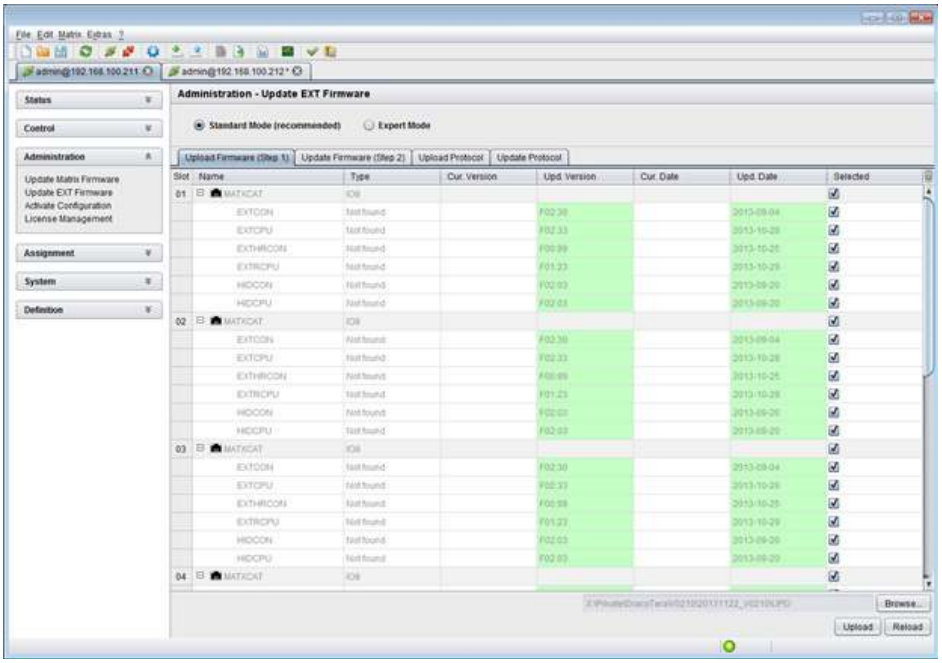

Figure 81. Extender Update in Standard Mode through the Java Tool - Step 1 (Upload Firmware)

2. Before the actual update process can begin, all firmware files have to be uploaded to the respective I/O boards of the extenders that have to be updated. If a newer firmware is available, the appropriate I/O boards will be automatically selected for upload in the **Selected** column and highlighted in green.
3. Start the upload and distribution of the update files by pressing the **Upload** button.
   Notes:
   - While performing the upload process, no update files are installed. The update process is performed after uploads are completed.
   - Unless all I/O cards are selected, the upload of the update files will be performed in sequence.
4. The successful completion of the upload process will be confirmed by a popup. Proceed to the actual update process by clicking the **Yes** button. The Java Tool will automatically open the **Update Firmware (Step 2)** tab.
   Note: To update with a firmware identical to or older than the version currently installed, enable the **Force Update** option in the lower part of the working area.

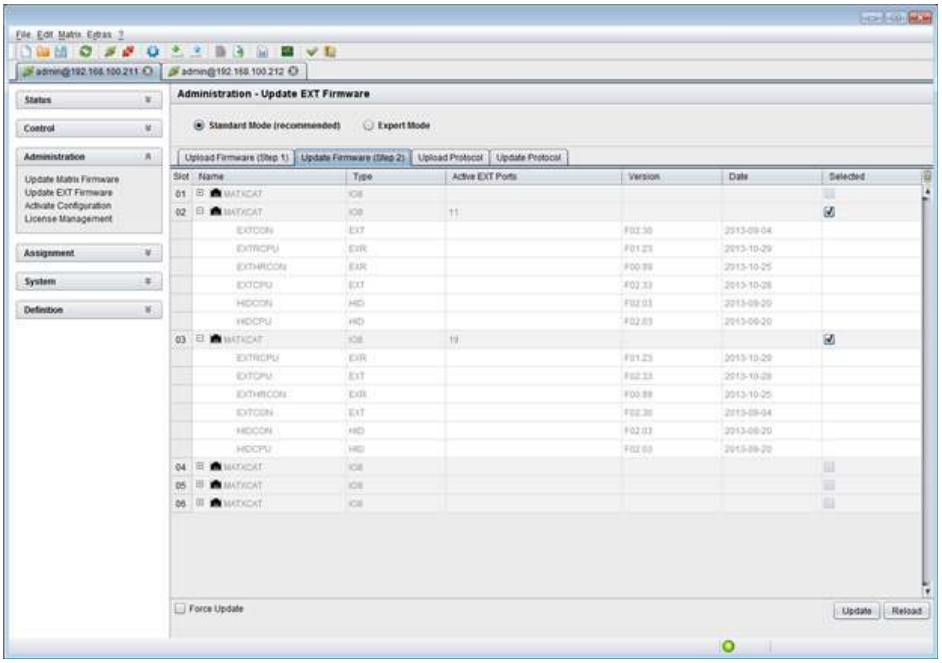

Figure 82. Extender Update in Standard Mode through the Java Tool - Step 2 (Update Firmware)

5. Start the actual update process by clicking the **Update** button.
   Note: Just before update begins, all affected I/O boards will be put into **Service Mode.** Each will be reactivated when its firmware update has completed.

Performing the Update in Expert Mode (sequential Update)
Take the following steps to prepare for the extender update.

1. Select **Administration > Update EXT Firmware** and select **Expert Mode** in the upper part of the working area. All extenders eligible for update will be automatically selected and highlighted in green.

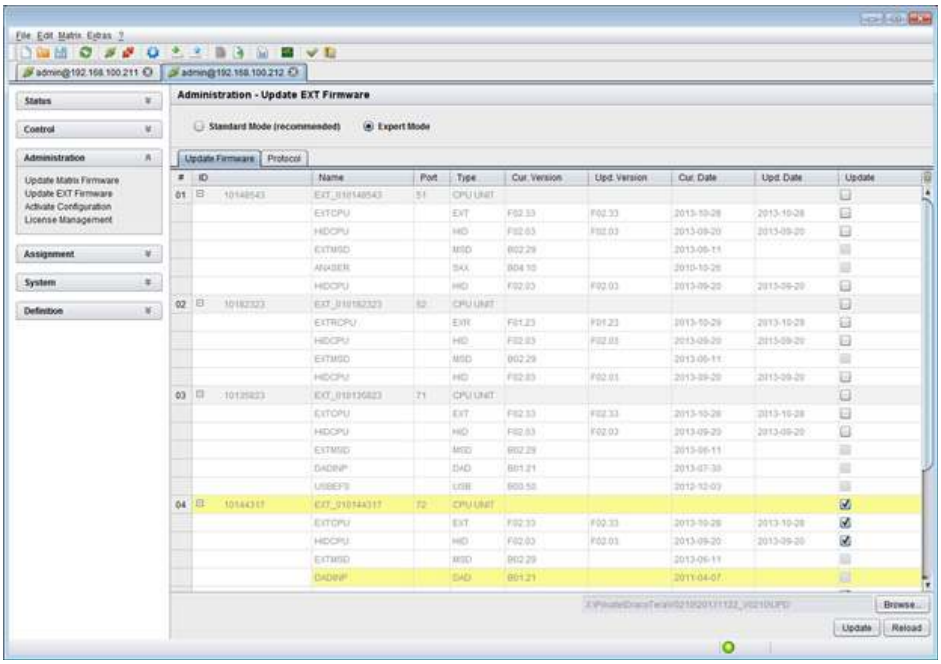

Figure 83. Extender Update in Expert Mode – Step 1 (from the Java Tool)

2. Put the matrix into Service Mode upon request in the popup window or through **Matrix > Activate Service Mode** in the menu bar.

   Note: During Service Mode, all matrix functions are disabled on the I/O boards on which updates are being performed. An OSD notice indicating that the I/O boards were placed in Service Mode is displayed on all monitors connected to the matrix through a CON device. Additionally, the Service Mode is indicated by a red tool icon in the lower part of the working area of the Java tool.

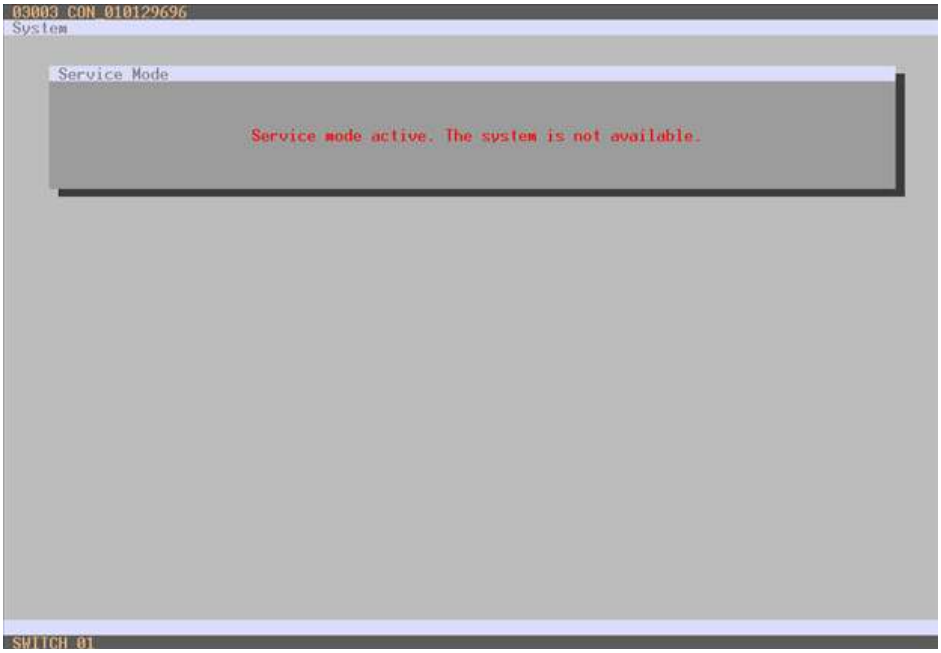

Figure 84. Extender Update in Expert Mode – Step 2 (from the Service Mode of the OSD)

3. Start the update by clicking the **Update** button in the lower part of the working area.
4. Quit Service Mode after updating by responding to the confirmation request in the popup window or through **Matrix > Deactivate Service Mode** in the task area.
5. After the update, verify through the Java tool that the updates for all extenders have been installed correctly. This is done in **Administration > Update EXT Firmware** from the **Protocol** tab of **Expert Mode**.

License Management

This menu provides for upgrading Orion XC functionality by installing the license keys for new function bundles. Contact Rose Electronics to purchase license keys. This menu is accessible only from the Java Tool.

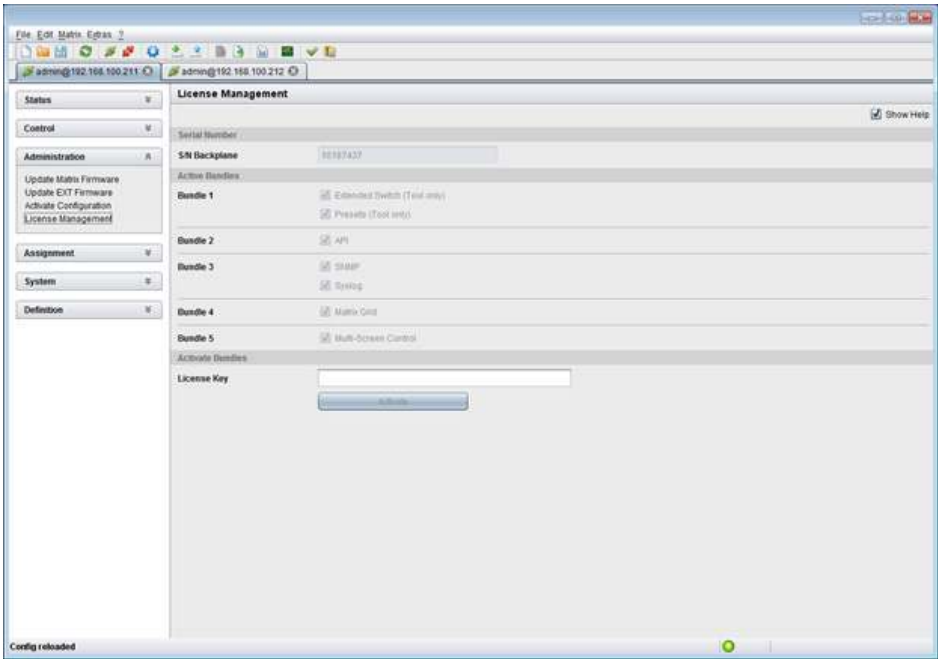

Figure 85. License Management through the Java Tool

To activate a function bundle, proceed as follows:

1. Select **Administration > License Management** in the task area.
2. In the working area, enter the license key in **Activate Bundles > License Key**.
3. Click the **Activate** button to enable the new function bundle. It is not necessary to restart the Orion XC.

Operation

The Orion XC can be operated in three different ways:

1. **Direct Switching through a keyboard connected to a CON port**
   - using 'Hot Keys' to switch between as many as 16 favorites
   - using 'Hot Keys' to invoke switching macros
2. **OSD Switching through a keyboard connected to a CON port**
   - using 'Hot Keys' to display the OSD and then selecting from the entire range of CPUs the console or user can access
3. **External Switching Commands**
   - from an external computer running the Java tool (network connection required)
   - through a third-party media controller (network or serial connection required)

Operating the Orion XC with 'Hot Keys'

Several operations on the Orion XC can be performed using the 'Hot Keys' at a console keyboard, as described below.

Direct Switching

Direct switching by 'Hot Keys' on a keyboard is the quickest way for a user to switch a console between different CPUs in their favorites list. It is possible to switch video, keyboard and mouse together, or just the video.

Direct Switching of Video, Keyboard and Mouse

1. Start Command Mode with the 'Hot Key' sequence. The **Caps Lock** and **Scroll Lock** keyboard LEDs will flash when Command Mode is activated.
2. Enter the index number of the new CPU from the list of favorites and confirm with <Enter>. Command Mode is closed and the console is connected to the new CPU with complete control.

Example: Switch video, keyboard and mouse to number 7 in the favorites list using the default hot key <left Shift>, <left Shift>, <7>, <Enter>

Note: The fastest switching will be achieved when identical mice, keyboards and monitors are used at all consoles. This contributes to a smooth and seamless direct switching of the matrix.

Direct Switching of Video, Keyboard and Mouse in Private Mode

1. Start Command Mode with the 'Hot Key'. The **Caps Lock** and **Scroll Lock** keyboard LEDs will flash when Command Mode is activated.
2. Enter the index number of the new CPU from the list of favorites and confirm with <left Shift>+<Enter>. Command Mode is closed and the console is connected to the new CPU with complete control in **Private Mode**.

Example: Switch video, keyboard and mouse to number 3 in the favorites list in **Private Mode** using the default hot key: <'left Shift'>, <'left Shift'>, <3>, <left Shift>+<Enter>

Direct Switching of Video Only

1. Start Command Mode with the 'Hot Key'. The **Caps Lock** and **Scroll Lock** keyboard LEDs will flash when Command Mode is activated.
2. Enter the index number of the new CPU from the list of favorites and confirm with <Space>. Command Mode is closed and the console is connected to the new CPU with video only.

Example: Switching to number 1 in the favorites list with video only using default hot key <left Shift>, <left Shift>, <1>, <Space>

Direct Switching of Video, Keyboard and Mouse to previous CPU

1. Start Command Mode with the 'Hot Key'. The **Caps Lock** and **Scroll Lock** keyboard LEDs will flash when Command Mode is activated.
2. Press the <p> key on the keyboard.
   Command Mode is closed and the console is connected to the previous CPU with complete control.

Notes:

- If the matrix is switched to a CPU that was previously connected with Video Only Access, it will now be connected to this CPU with full KVM access.
- When using 'Hot Keys' for direct switching, the user may only be able to connect to unused CPUs he also has permission to access. The **Force Connect** and **Force Disconnect** options, as well as the restrictions of the User ACL and CON ACL are taken into account.
- 'Hot Keys' switching is only supported if the User is logged in, or if neither **Enable User Login** nor **Enable User ACL** is selected.

Disconnect current connection

1. Start Command Mode with the 'Hot Key'. The **Caps Lock** and **Scroll Lock** keyboard LEDs will flash when Command Mode is activated.
2. Press the <Backspace> key on the keyboard. The Command Mode is closed and the console is disconnected from the currently connected CPU.

Scan Mode

Scan Mode enables fast switching between video inputs from different CPUs in the favorites list without continuously using the 'Hot Key'. The switching between two video signals can even take place within one frame.

1. Start command mode with the 'Hot Key'. The **Caps Lock** and **Scroll Lock** keyboard LEDs will flash when Command Mode is activated.
2. Press the <'Hot Key'> key and hold it down. The index number of CPUs 1 – 9 from the list of favorites can be entered on the keyboard, causing the matrix to switch immediately to the video signal of the respective CPU.
3. Leave Scan Mode by pressing <'Hot Key'> + <Esc>.

Note: Optimal scan mode results can be achieved by the use of display resolutions as close to identical as possible. This contributes to a smooth and seamless switching in scan mode.

Function Keys <F1>-<F16>

In Command Mode, macros 1-16 can be invoked with the function keys <F1>–<F16> of the connected standard keyboard.

The stored command sequence for the appropriate function key is executed and Command Mode is closed.

It is not necessary to use <Enter> to confirm selection of macros.

Addressing of Main and Sub Matrices

The Orion XC can be cascaded over two levels. Commands (including displaying the OSD) can be sent to either the main or the sub matrix.

When command mode is active, an extra keystroke can indicate whether the command should be handled by the main matrix or the sub matrix.

OSD Access

- Display the main matrix OSD:
  <'Hot Key'>, <'Hot Key'>, <m> (optional), <o>
- Display the sub matrix OSD:
  <'Hot Key'>, <'Hot Key'>, <s>, <o>

In order to perform cross-matrix switching, proceed as follows.

1. Open the OSD of the master matrix with the following keyboard sequence:
   <'Hot Key'>, <o>
2. Select the CPU device configured as a Tie Line in the CPU selection list and press <Enter> to switch to it.
3. Open the OSD of the sub matrix with the following keyboard command:
   <'Hot Key'>, <s>, <o>
4. Select the target CPU in the CPU selection list of the sub matrix and press <Enter> to switch to it.

Note: The selected main matrix / sub matrix mode will remain activated unless the other mode is manually activated, or Command Mode is exited. This means that if <s> is currently selected for example, all subsequent commands will be sent to the slave, as long as Command Mode remains active.

KVM Switching

KVM Switching can be performed only through the OSD.

➔ Select **Switch** in the main menu.

Note: By pressing <F8>, inactive CPU Devices can be hidden in order to ensure a better overview.

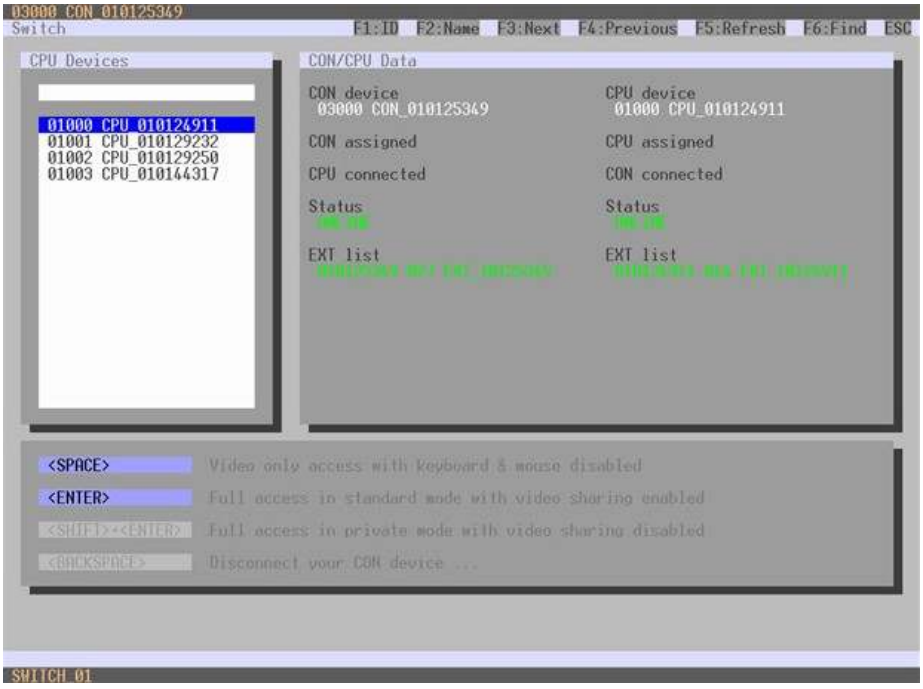

Figure 86. KVM Switching Through the OSD

To switch the console to any available CPU, proceed as follows:

1. Select a CPU device from the **CPU Devices** list on the left side to connect to the CON device.
2. Confirm the desired connection type with the appropriate keyboard command.

Switching operations by a CON device can only be made to the devices in the **CPU Devices** list.

Note: Listed CPU Devices highlighted in red are currently connected in Private Mode and are blocked by the connected CON Device.

Switching through the Selection List for CPU Devices
It is also possible to switch CPU devices by means of a selection list next to the OSD in full screen.

In order to use the selection list for CPU Devices, proceed as follows.

1. Activate the **Enable CPU Selection** option in the **Configuration > EXT Units** menu for those consoles where the selection list for CPU Devices should be available.
2. Execute the key sequence for opening the OSD. The selection list immediately appears in the preset position of the extender OSD.
   Note: Pressing <F8> hides inactive CPU Devices for a simpler overview.
3. Execute the desired switching operation by pressing the respective key, as described in the following topic.

To exit from the Selection List to the full OSD menus, press <F7>. To close the selection list, press <Esc>.

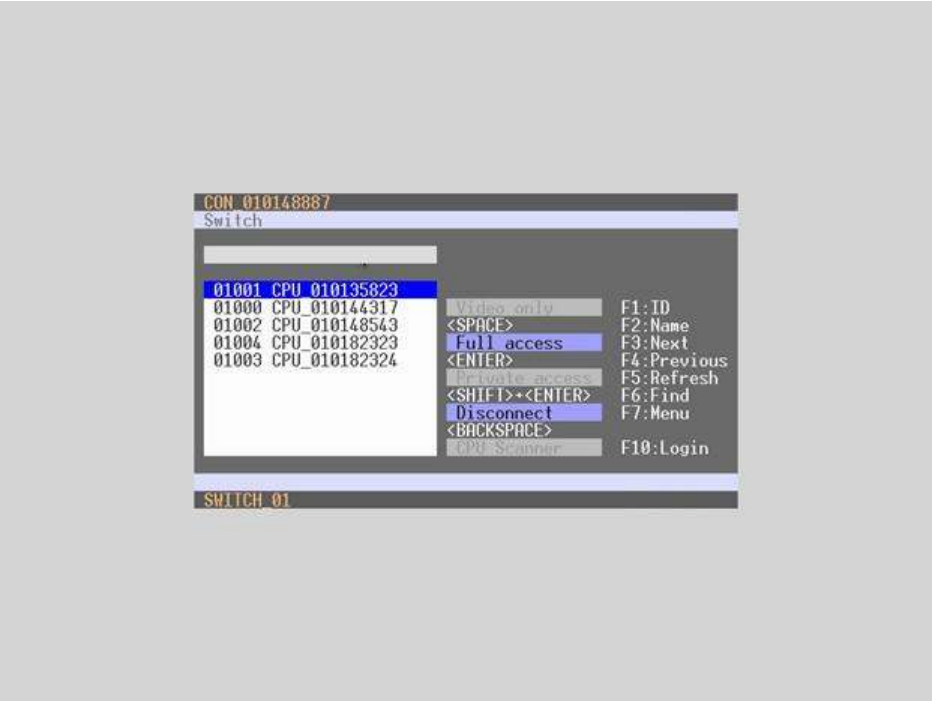

Figure 87. CPU Selection List in OSD for KVM Switching

Activating automatic Scan Mode for CPU Devices
The matrix offers an automatic scan mode based on the favorites list of each console or user. Scan mode allows the matrix to switch sequentially between the CPU Devices in the favorites list at a specified time interval. Automatic scan mode operates in video only mode. Scan Mode configuration was described in the Configuration section. Scan Mode activation is only available from the OSD.

To activate scan mode, proceed as follows.

1. Define a favorites list for a CON Device or user.
2. Start Command Mode with the 'Hot Key' and press <o> to open the OSD.
3. Select one of the CPU Devices in the CPU selection list that are defined in the favorites list.
4. Confirm the CPU Device selection by pressing the **CPU Scanner** button. The scan will automatically start.
5. If the **Force CPU Scan option** is enabled, the scan will automatically start after switching the respective CON Device to any CPU Device from the favorites list without the need to press the **CPU Scanner** button.

Extended Switching

Extended switching of any console to any CPU can be performed through the OSD or the Java Tool.

Extended Switching Through the OSD

To switch any console to any available CPU, proceed as follows:

➔ Select **Extended Switch** in the main menu.

Note: Pressing <F8> hides inactive CPU Devices to provide a simpler overview.

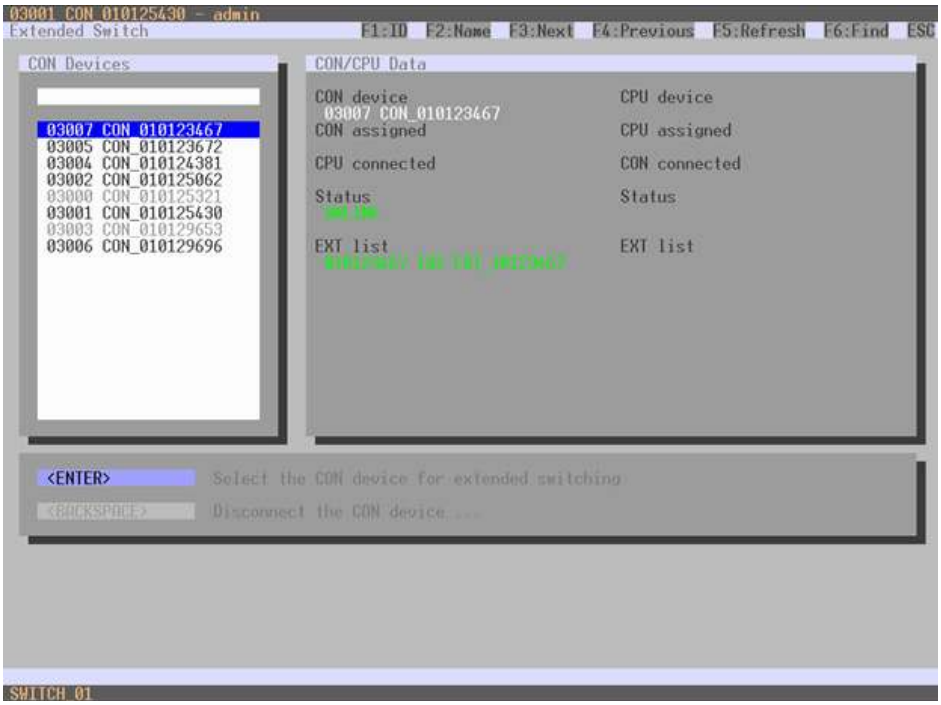

Figure 88. Extended KVM Switching through the OSD

1. Select a con device from the **CON Devices** list on the left side to be switched to a CPU device, and open it by pressing <Enter>.
2. Now select a CPU device from the **CPU Devices** list on the left side to be connected to the open CON device.
3. Confirm the desired connection type with the appropriate keyboard command, listed below.

A given CON device can only be switched to a CPU device that is shown as available in **CPU Devices** list.

The following information is shown in this menu:

Field	Description
CON device	Assigned physical extender unit (CON unit)
CON assigned	Virtual CON Device that is assigned to the real CON device
CPU connected	Currently connected CPU device
CON status	Current connection status (CON device)
EXT list	List of all available physical extender units (CON units)
CPU device	Assigned physical extender unit (CPU unit)
CPU assigned	Real CPU device that is assigned to a virtual CPU device
CON connected	Currently connected CON device
CPU status	Current connection status (CPU device)
EXT list	List of all available physical extender units (CPU units)

Select between the following switching functions:

Function	Keyboard Command
Set a video only connection.	<Space>
Set a KVM connection.	<Enter>
Set a KVM connection in private mode (video sharing disabled).	<Shift> + <Enter>
Disconnect the CON device from the CPU device.	<Backspace>

KVM Switching through the Java Tool
There are two methods to perform switching operations for the Orion XC via the Java Tool.

Method 1:
➔ Select **Control > Extended Switch** in the task area.

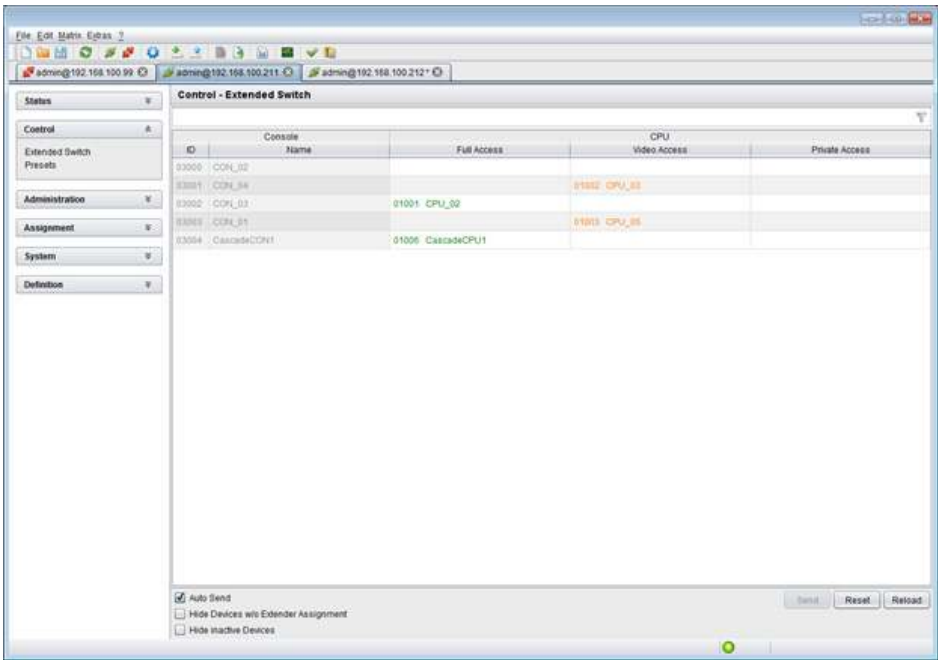

Figure 89. Extended KVM Switching through Java Tool - Method 1 (From Extended Switch Option)

All connected consoles and their CPU connections are shown in columns in the working area in this screen.

Switching operations can only be performed in online mode, that is, when there is an active network connection between the matrix and the Java Tool.

➔ To make a **KVM connection** between a console and a CPU, double-click on the corresponding selection box within the **Full Access** column and select the desired CPU.
➔ To make a **video connection** between a console and a CPU, double-click on the corresponding selection box within the **Video Only** column and select the desired CPU.
➔ To make a **Private Mode** connection between a console and a CPU, double-click on the corresponding selection box within the **Private Mode** column and select the desired CPU.

Note: CPUs to which a console does not have access rights will not appear in the selection list.

The following symbols are shown in the connection overview:

Symbol	Description
	CON device is connected with **Shared Access** with at least one additional console to the same CPU. The CON device currently has a Full Access connection.
	CON device is connected with **Shared Access** with at least one additional console to the same CPU. The CON device currently has a Video Only connection.

Use the following buttons to perform a switching operation:

Button	Function
Send	Send desired switching operations to the matrix
Reset	Disconnect all existing connections within the matrix
Reload	Reload switching status list

Notes:
- When the **Auto Send** function in the left lower corner of the work area is selected, switching operations will be completed immediately without needing to click the **Send** button.
- When the **Hide Devices w/o Extender Assignment** function in the lower left corner of the work area is selected, only CON and CPU Devices that are assigned to extenders are shown.

Method 2:
➔ Select **Status > Matrix View** in the task area or select **Status > Grid Port View** when using a Matrix Grid.

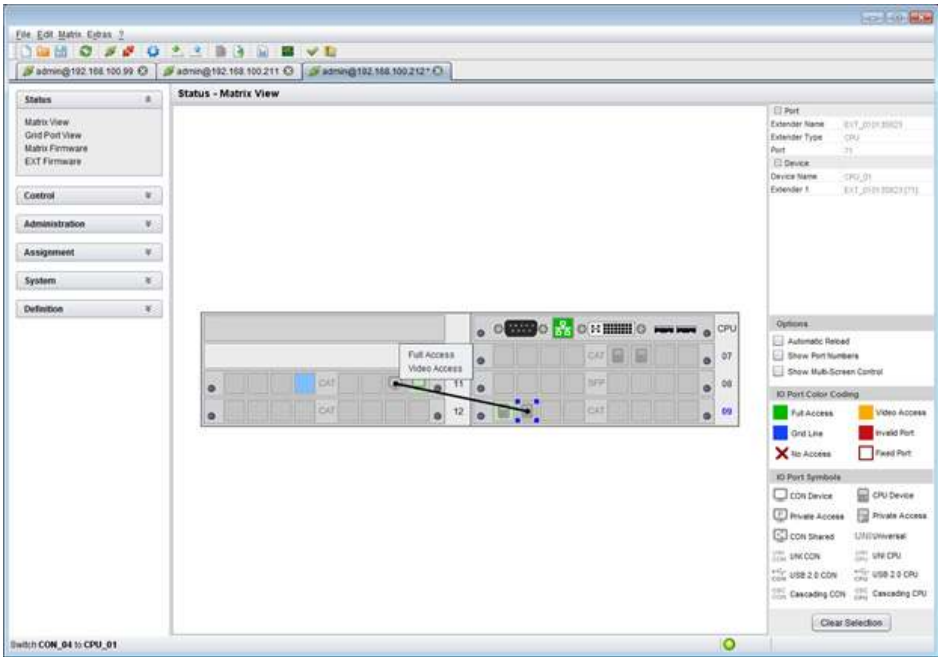

Figure 90. Extended KVM Switching through Java Tool - Method 2 (From Matrix View Option)

To perform switching operations between CON and CPU devices proceed as follows:

1. Move the mouse cursor to the port that is to be switched.
2. Hold down the left mouse button and move the cursor to the port that is to be connected to the first port. The cursor movement will be indicated as a black line.
3. Release the left mouse button. A popup menu to select the available switching type (**Full Access**, **Video Access** or **Private Mode**) is displayed.
4. Select the desired switching type. The switching operation will be immediately executed. At the same time, all extender units assigned to the selected devices will be switched.

Note: If there is a red X on a port when switching by using the **Matrix View**, the console selected for connection does not have access rights to the CPU at that port.

To disconnect an existing connection between CON and CPU devices proceed as follows:

1. Right click on the port to be disconnected.
2. Select the **Disconnect** function in the popup that appears. The connected port will be disconnected immediately, and all extenders assigned to those CON and CPU devices will be disconnected as well.

CON Switch

KVM extender CON Units which offer the ability to directly connect a local source (computer, CPU) can be switched through the matrix. Switching between the local source and a matrix KVM connection can be performed from by using 'Hot Keys' or through the OSD. Switching to the local source causes any matrix KVM connection to be automatically disconnected.

When CON Units that can connect to a local source (computer, CPU) are used in a Multi-Screen Control environment, switching to the local source is disabled.

CON Switching through the OSD
In order to switch to a local source, proceed as follows:

➔ Select **Switch** in the main menu.

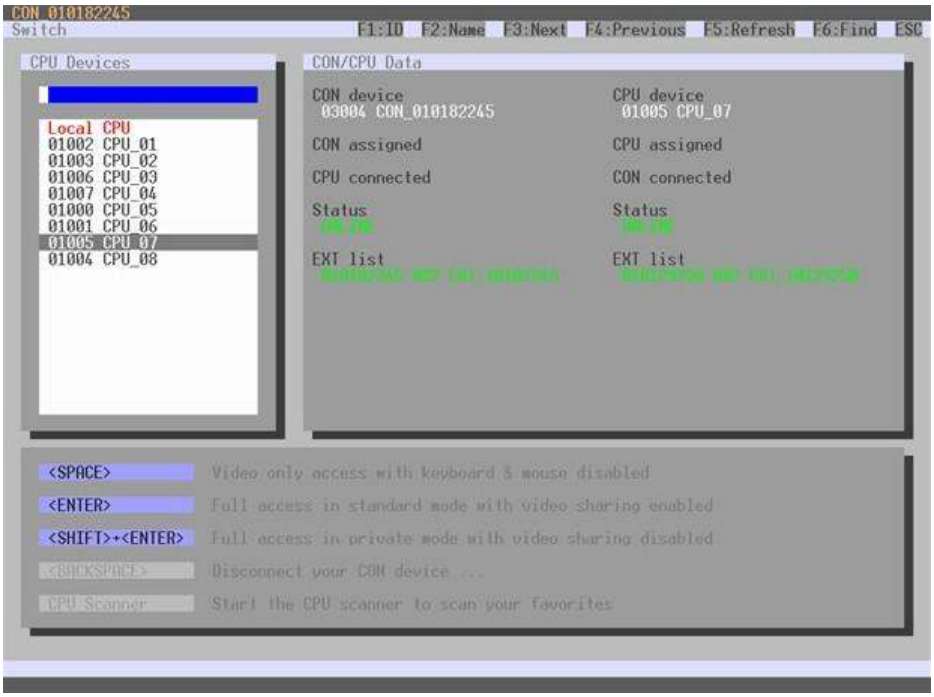

Figure 91. CON Switching Through the OSD

1. If not in the **Switch** menu of the OSD, start Command Mode with the 'Hot Key'.
2. Press <o> to open the OSD. This shows a list of all available CPUs as a start menu.
3. Select **Local CPU** in the list and switch to it. The switching operation to the local source will be performed immediately.

Note: The local source (computer, CPU) will only be shown in the OSD if the CON Unit includes the option for a local connection.

As an alternative, the following keyboard commands are available to switch to the local source:

Function	Keyboard Command
Switching to extender connection	<'Hot Key'>, <k>, <1>, <Enter>
Switching to extender connection 2 (only with redundant CON Units)	<'Hot Key'>, <k>, <2>, <Enter>
Switching to the local source (computer, CPU)	<'Hot Key'>, <l>, <Enter>

Multi-Screen Control

The Multi-Screen function allows a Con Device with several assigned monitors to switch keyboard and mouse between several CPU sources by either moving the mouse pointer beyond the edge of the current monitor, or by keyboard command. Configuring Con Devices for Multi-screen control is described in the Configuration section, Console Device Settings.

Switching through the mouse

Switching the USB-HID devices can be done by moving the mouse pointer beyond the edge of the current display. In order to perform a switching operation by moving the mouse, proceed as follows.

1. Move the mouse pointer to the vertical or horizontal edge of the display that borders a neighboring display in the Con Device.
2. Move the mouse pointer beyond the edge of the display. USB HID switching will occur to the CPU displayed on the neighboring monitor. The mouse pointer will appear on the adjacent display, and any other console USB-HID devices (e.g. keyboard) will also be available at the CPU device displayed on that monitor.

Switching through the keyboard

Switching the USB-HID devices can also be done using the keyboard. In order to perform a switching operation via keyboard command, proceed as follows.

1. Start Command Mode with the 'Hot Key'.
2. Select the target display by pressing the appropriate key on the numeric pad of the keyboard.

The switching operation will be performed and the USB-HID devices will be available at the CPU connected to the target display.

The keyboard commands to switch to each display's CPU connection are given the table below.

Keyboard Command	Function
<'Hot Key'>, <Num 0>	Switch the USB-HID devices to the CPU connected to the CON Unit display with the keyboard and mouse
<'Hot Key'>, <Num 1>	Switch the USB-HID devices to the CPU connected to display #1
<'Hot Key'>, <Num 2>	Switch the USB-HID devices to the CPU connected to display #2
<'Hot Key'>, <Num 3>	Switch the USB-HID devices to the CPU connected to display #3
<'Hot Key'>, <Num 4>	Switch the USB-HID devices to the CPU connected to display #4

USB 2.0 Switching

Switching of USB 2.0 extenders works like the switching of KVM extenders. There are two options for switching USB 2.0 extenders depending on how the extenders are configured in the Matrix.

1. An extender unit with USB 2.0 is created and assigned to an existing device which has KVM extender units.
2. A separate device is created for the extender unit with USB 2.0 which has no KVM extender units assigned to it. This allows switching of USB 2.0 devices independently from KVM devices.

Notes:

- Switching of USB 2.0 signals uses Extended Switching functionality as described earlier in this section.
- When using parallel operation within the matrix, set the Release Time in the **Configuration > Switch** menu to 10 s or more. Otherwise, the USB 2.0 extender connection will not be established for reasons of security and stability.

Presets

This menu allows the creation and activation of predefined macros for switching the matrix without having to load a new configuration. It can only be accessed from the Java Tool.

➔ Select **Control > Presets** in the task area.

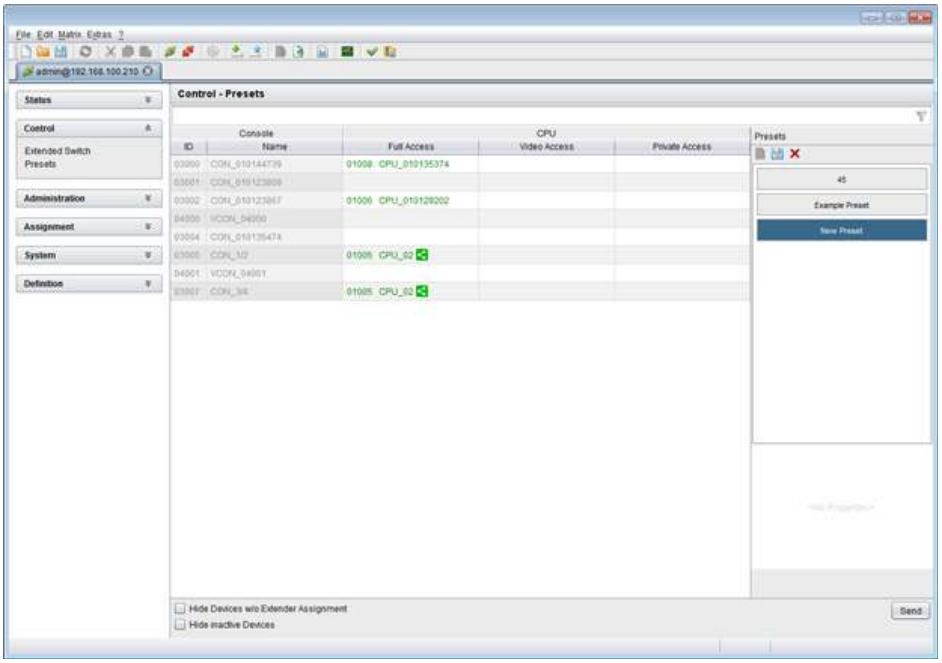

Figure 92. Setting up Macro Presets through the Java Tool

To create a new switch macro, proceed as follows:

1. Open a new switch macro by clicking on the **New** icon in the Presets column of the working area. A prompt will be displayed asking whether the existing connections should be adopted for the new switch macro.
2. Double click in the **Full Access**, **Video Only** or **Private Mode** columns to select the switching operations desired, or use the function for a disconnect (**Disconnect CPU**).
3. Save the switch macro by clicking the **Save** icon in the Presets column of the working area. A save dialog will be opened.
4. Enter a name for the new switch macro and confirm by clicking the **Ok** button in the save dialog.
5. By clicking on a selected switch macro with the right mouse button, a copy of the current switch macro can be created using the **Save as...** option.
6. Macros can be deleted by selecting them and clicking the **Delete** icon.

To load a switch macro to the matrix, proceed as follows:

1. Select the switch macro to be loaded in the Presets column of the working area.
2. Activate the selected macro by clicking the **Send** button below the Presets column.

Notes:

- A predefined switch macro can only be activated in when the Java tool is in online mode.
- Only switch macros that are hardware and current configuration compliant can be executed.

Serial Interface

The Orion XC allows switching via a serial interface (RS232).

Detailed information for the serial interface and the corresponding switching commands are available in form of an API document (application programming interface) upon request.

Power Up and Power Down Functions

This section deals with Power functions of the Orion XC.

Restart

The Orion XC can be restarted through the OSD and the Java Tool.

Restarting Through the OSD

1. Select **Configuration > Restart Matrix** or **Restart IO Board** in the main menu to restart either the matrix or I/O boards.
2. Confirm the selection with **Okay** button.

The matrix or I/O boards will be restarted with the current settings.

Restarting through the Java Tool

➔ Select **Matrix > Advanced Service > Restart Matrix** in the menu bar.

The Orion XC will be restarted with the current settings.

Note: The boot process of the matrix might take longer no physical network connection is available.

Factory Reset

Resetting the system to factory defaults is available through the OSD and the Java Tool.

When a factory reset is done, all current settings and all configurations stored in the matrix will be lost. This also applies to the network parameters (DHCP will be reset to **N**) and the admin password.

If firmware updates have been performed, the Orion XC will be set to the defaults defined in the most recent firmware applied.

Resetting Through the OSD

1. Select **Configuration > Factory Reset** in the main menu.
2. Confirm the selection with the **Okay** button.

The Orion XC will be reset to factory settings.

Resetting Through the Java Tool

1. Select **Matrix > Advanced Service > Factory Reset** in the menu bar.
2. Confirm the selection with the **Yes** button.

Power Down

A complete system shutdown or a partial shutdown of an I/O board can be performed through the OSD.

To shut down the system, proceed as follows.

1. From the main menu, select **Configuration > Shut down Matrix**.
2. Confirm the selection with the **Okay** button.

The matrix will be shut down.

To shut down an I/O Board, proceed as follows.

1. From the main menu, **Select Configuration > Shut down IO Board**.
2. Confirm the selection with the **Okay** button.

The I/O board will be shut down.

Summary of Keyboard Commands

The following two tables summarize all the keyboard commands that affect extender and matrix functions. In the command notation, '+', ',' and 'x' have these meanings:

<Key> + <Key> Press keys simultaneously
<Key>, <Key> Press keys successively
2x <Key> Press key two times, quickly (similar to a mouse double-click)

Extender

Keyboard Command	Description
<'Hot Key'>, <a>	Download of DDC information for the monitor connected to the CON Unit into the CPU Unit
<'Hot Key'>, <k>, <1>, <Enter>	Switch to matrix KVM connection 1 (only with HDMI CON Units with connection available for a local source)
<'Hot Key'>, <k>, <2>, <Enter>	Switch to matrix KVM connection 2 (only with HDMI CON Units with connection available for a local source and a redundant matrix interconnection)
<'Hot Key'>, <l>, <Enter>	Switch to local source (computer, CPU) (only with HDMI CON Units with connection available for a local source)
<'Hot Key'>, <h>, <w>, <Enter>	USB-HID Ghosting: Write device descriptions of the input devices connected to the CON Unit into the CPU Unit. Activate emulation in the CPU Unit.
<'Hot Key'>, <h>, <e>, <Enter>	Activate the emulation of already stored device descriptions in the CPU Unit
<'Hot Key'>, <h>, <d>, <Enter>	Deactivate the emulation of device descriptions in the CPU Unit. The input devices connected to the CON Unit will be passed transparently to the source (computer, CPU).
<'Hot Key'>, <h>, <r>, <Enter>	Deactivate the emulation of device descriptions in the CPU Unit, and remove the descriptions stored in the CPU Unit. The input devices connected to the CON Unit will be passed transparently to the source (computer, CPU).

Matrix

Keyboard Command	Description
<'Hot Key'>, <o>	Open OSD
<‘Hot Key‘>, <m>, <o>	Open OSD of the master matrix in a cascaded environment
<‘Hot Key‘>, <s>, <o>	Open OSD of the sub matrix in a cascaded environment
<'Hot Key'>, <’n’>, <Enter>	Set a KVM connection (keyboard, mouse and video) to the selected source (computer, CPU), where ‘n’ is the favorites list number or the port number, depending on whether Port Mode is activated
<'Hot Key'>, <’n’>, <Space>	Set a video only connection to the selected source (computer, CPU) , where ‘n’ is the favorites list number or the port number, depending on whether Port Mode is activated
<'Hot Key'>, <’n’>, <Left Shift> + <Enter>	Set a Private Mode connection to the selected source (computer, CPU) , where ‘n’ is the favorites list number or the port number, depending on whether Port Mode is activated
<'Hot Key'>, <Backspace>	Close the current connection of the own console
<'Hot Key'>, <p>	Switch back to the previously connected source (computer, CPU) with a KVM connection
<'Hot Key'>, <1> ... <16>, <Enter> (<Space> or <Left Shift> + <Enter>)	Switch to a source (computer, CPU) stored in the favorites List with a KVM connection (video only or Private-Mode connection)
<'Hot Key'>, <F1> ... <F16>	Execute a predefined macro
<'Hot Key'>, <c>, <new 'Hot Key'-Code>, <Enter>	Change the 'Hot Key' to one of the predefined values specified in the 'Hot Key' table
<'Hot Key'>, <c>, <0>, <new 'Hot Key' key >, <Enter>	New 'Hot Key' is defined by the user
<'Hot Key'>, <f>, <new 'Hot Key'-Code>, <Enter>	Change the 'Hot Key' for direct OSD access to one of the predefined values in the 'Hot Key' table
<'Hot Key'>, <f>, <0>, <new 'Hot Key' key>, <Enter>	New ‘Hot Key” for direct OSD access is defined by the user
<'Hot Key'>, <Num 0>	Switch the USB-HID signal to the user’s display (CON Unit with keyboard and mouse in Multi-screen control mode)
<'Hot Key'>, <Num 1>	Switch the USB-HID signals to display #1 (in Multi-screen control)
<'Hot Key'>, <Num 2>	Switch the USB-HID signals to display #2 (in Multi-screen control)
<'Hot Key'>, <Num 3>	Switch the USB-HID signals to display #3 (in Multi-screen control)
<'Hot Key'>, <Num 4>	Switch the USB-HID signals to display #4 (in Multi-screen control)

Diagnostics and Status Indicators

This section describes the diagnostics that are available on the Orion XC. Status indicators, both physically on the unit as LED indicators, and in the software, are discussed here.

Status LEDs

The Orion XC components are fitted with the following LEDs for overall status indication.

CPU

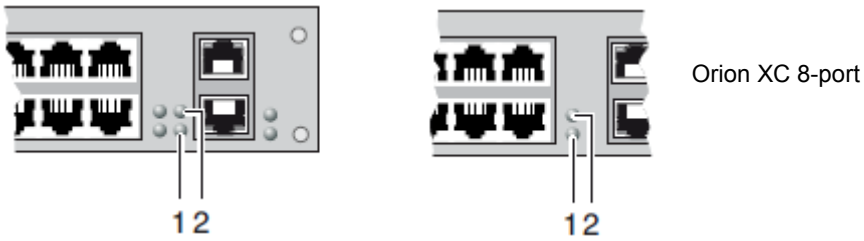

Figure 93. CPU Status LEDs

1 Status LED 2
2 Status LED 1

Status LEDs for CPU:

Pos.	LED	Status	Description
1	**Status 2**	White	Controller is in registration
		Red flashing	Registration of the matrix has started
		Off	Operating condition
2	**Status 1**	White	Controller is in registration
		Blue flashing	Registration of the matrix has started
		Red flashing	Registration in progress
		Green flashing	Operating condition

Due to variations in LED type, "white" might also appear as light purple or light blue.

LAN Port

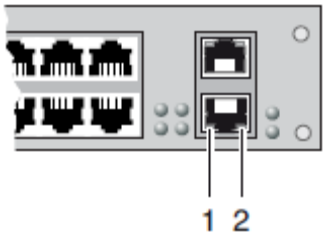

Figure 94. LAN Port Status LEDs

1 Status LED 1
2 Status LED 2

Status LEDs on the LAN Port:

Pos.	LED	Status	Description
1	**Status 1** (orange)	On	Connection to network available
		Off	No connection to network
2	**Status 2** (green)	Flashing	Data traffic active
		Off	Data traffic not active

I/O Ports Status LEDs

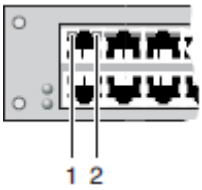

Figure 95. I/O Port Status LEDs

1 → Link Status Port 1
2 → Link Status Port 2

Status LEDs at the ports of the I/O boards:

Pos.	LED	Status	Description
1 & 2	**Link Status**	Off	Initialization
		Green	Connection via interconnect cable ok, data traffic active
		Orange	Extender not recognized

Power Supply Unit

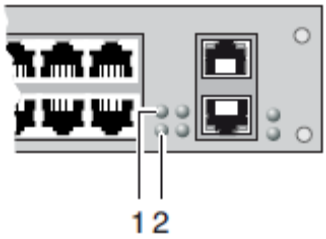

Figure 96. Power Supply Unit Status LEDs

1 → Power supply unit 1 status LED
2 → Power supply unit 2 status LED

Status LEDs of the Power Supply Units:

Pos.	LED	Status	Description
1	**Status PSU 1** (green)	On	Operating condition
		Off	Power supply unit off
2	**Status PSU 2** (blue)	On	Operating condition
		Off	Power supply unit off

Fan Status LEDs

Figure 97. Fan Status LEDs

1 → Left fan status LED 1
2 → Left fan status LED 2
3 → Right fan status LED 2
4 → Right fan status LED 1

Status LEDs of the fan trays:

Pos.	LED	Status	Description
1	**Left Fan Status 1** (red)	On	Error Indication
		Off	Operating Condition
2	**Left Fan Status 2** (green)	On	Operating Condition
		Off	Fan Off
3	**Right Fan Status 2** (green)	On	Operating Condition
		Off	Fan Off
4	**Right Fan Status 1** (red)	On	Error Indication
		Off	Operating Condition

Port Status

The connections and the switching status between the various consoles and CPUs are shown in this screen. It can only be accessed from the Java Tool.

Viewing Port Status with the Java Tool

The current port configuration of the Orion XC is illustrated in this screen.

➔ Select **Status > Matrix View** in the task area when connected to the matrix.

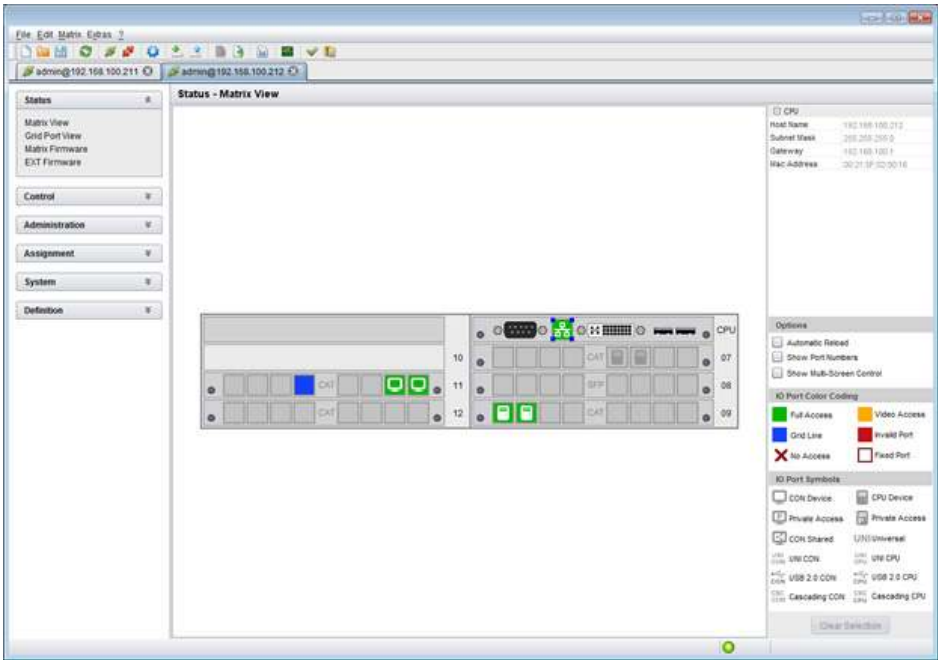

Figure 98. Viewing Port Status with the Java Tool (Example 1)

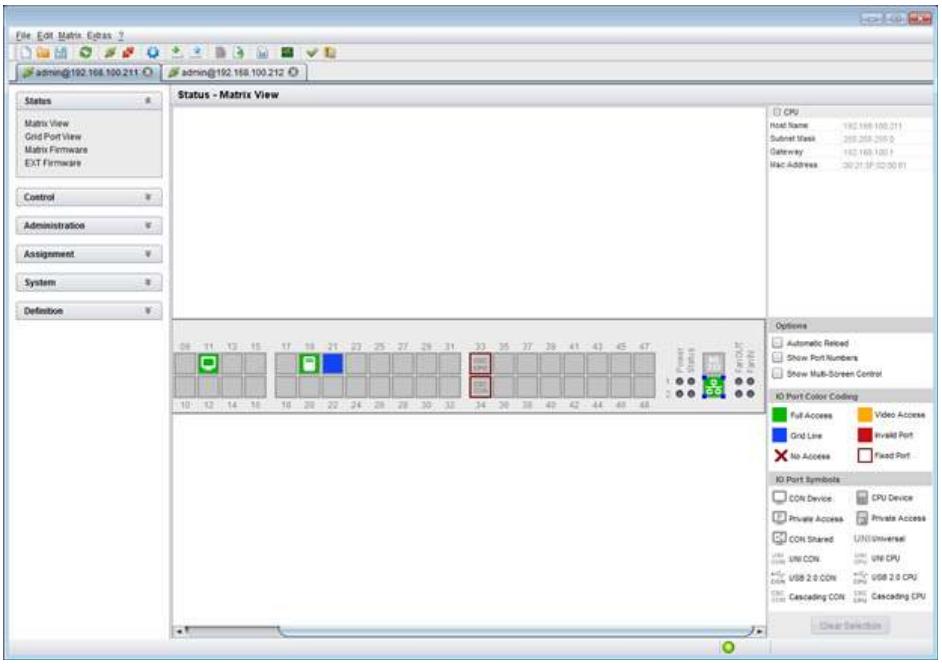

Figure 99. Viewing Port Status with the Java Tool (Example 2)

The colors indicate the connection status:

Color	Description
Grey	Port not connected
Orange	Video connection
Green	KVM connection
Red	Faulty Port
Blue	Port connected to another matrix through a Grid Line

The symbol indicates an extender that is recognized and defined at a certain port:

Symbol	Description
	Port connected to a CPU unit
	Port is connected to a CPU unit that is switched to a CON unit in **Private Mode**
	Port connected to a CON unit
	Port connected to a CON unit with **Shared Access** to a CPU.
	Port is connected to a CON unit that is connected to a CPU unit in **Private Mode**
	Port connected to an USB 2.0 CPU unit
	Port connected to an USB 2.0 CON unit
	Port is configured as Cascade-CON port for cascading of matrices.
	Port is configured as Cascade-CPU port for cascading of matrices.
	Port is a UNI port of an I/O board that can be used for USB 3.0 or SDI switching.
	UNI port is configured as CON port in order to connect USB 3.0 CON extenders, for example.
	UNI port is configured as CPU port in order to connect USB 3.0 CPU extenders, for example.

- Red framed ports are defined as "fixed" (e. g. for USB 2.0 connections)
- The port with a static blue frame and blue squares at the corners is currently selected.
- If a port is selected, all the other ports will be displayed transparent except those that are connected to the currently selected port. A selection can be cleared by clicking the **Clear Selection** button.
- If a red X is shown on a port when attempting to switch with Matrix View, the console to be connected does not have access rights to the CPU at that port.

➔ Click the left mouse button to display extender information for the currently selected port on the right hand side of the working area. The following information is available:

Field	Description
Extender Name	Name of the selected extender
Extender Type	Type of the selected extender
Port ID	Number of the selected port
Device Name	Name of the connected console or CPU
Extender 1	Name of the selected extender
Connections	Listing of assigned connections to the selected port (Full Access or Video Access)

➔ Click the right mouse button to display the same information and open the context menu for the currently selected port with available functions. The following context functions are available:

Function	Description
Open Extender	The screen for definition of the currently selected extender is opened
Open Device	The screen for definition of the currently selected console or CPU is opened
Extended Switch	The screen for execution of extended switching operations is opened
Disconnect	Disconnect an existing connection
Restart I/O Board	Restart the selected extender's I/O board

The Matrix View can be reloaded using the following means:

- Press the <F5> key on the Java tool keyboard
- Select **Edit > Reload** in the Java tool menu bar
- Click the **Reload** button in the tool bar of the Java tool

Port Status Matrix Grid

This screen shows the connections and switching status between the CON and CPU Devices within the Matrix Grid. The screen can only be accessed in the Java Tool.

The screen is designed to show the matrix switches that are part of the Matrix Grid. Each matrix is displayed in an optimized view of 24 ports per line, in order to be able to show a larger number of ports,

➔ Select **Status > Grid Port View** in the task area when connected to the matrix.

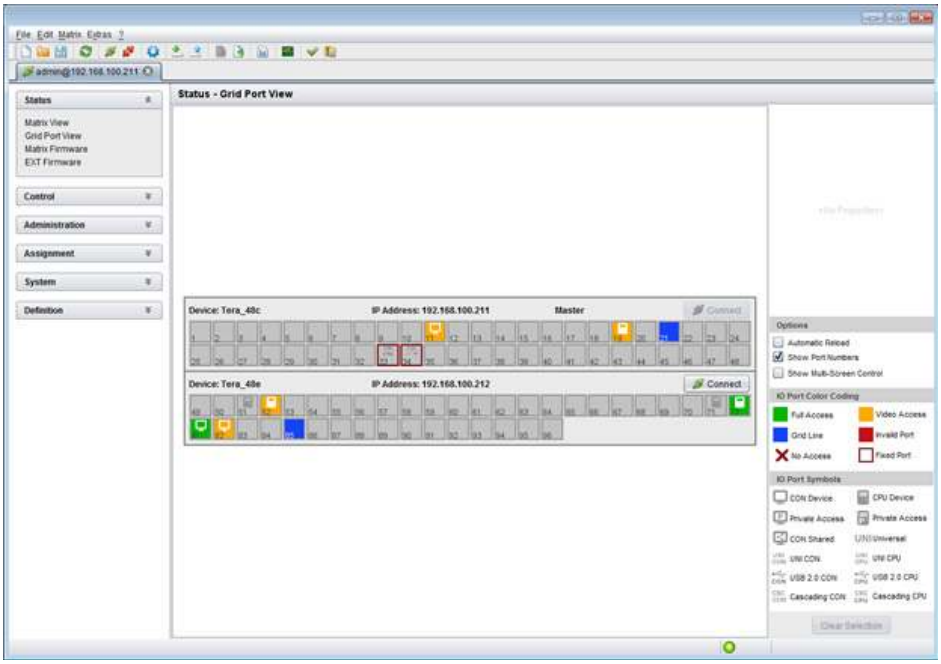

Figure 100. Port Status Matrix Grid

Note: Functions, colors and symbols used in the Grid Port View are identical to those used for port status in the Matrix View.

Extender OSD

All extenders used with the Orion XC are provided with their own OSD to display the connection status of the console.

Figure 101.Extender OSD

The following information is shown in the OSD information screen:

Field	Description
CON	Name of the console
CPU	Name of the currently connected CPU
ACCESS	▪ **Full Access**: The console has a KVM connection to the displayed CPU. ▪ **Video Access**: The console has a video only connection to the displayed CPU. ▪ **Private Mode**: The console has a Private Mode connection to the displayed CPU. ▪ **Not connected**: The console is not connected to a CPU.
SHARED	**x device(s)** shows the number of devices that are connected to the console's currently connected CPU (e.g. 3 devices). If the field is blank, no other devices are connected to the current CPU.

Note: If the **Mouse Connect** or **Keyboard Connect** options are active, the name of the console with keyboard/mouse control will be displayed at those consoles that do not currently have keyboard/mouse control. The console is displayed in yellow color under **Access**.

Network Status

The current network configuration is shown in this screen. This screen can be accessed through the OSD or the Java Tool.

The following information is shown in this menu:

Field	Description
DHCP	The network is allowed to assign network settings dynamically. Displays **YES** or **NO.**
IP Address	The current IP address of the matrix, whether provided manually or via DHCP
Subnet Mask	The current subnet mask, whether provided manually or via DHCP
Gateway	The current gateway address, whether provided manually or via DHCP
MAC ID	The MAC address of the matrix

Viewing Network Status through the OSD

➔ Select **Status > Network** in the main menu.

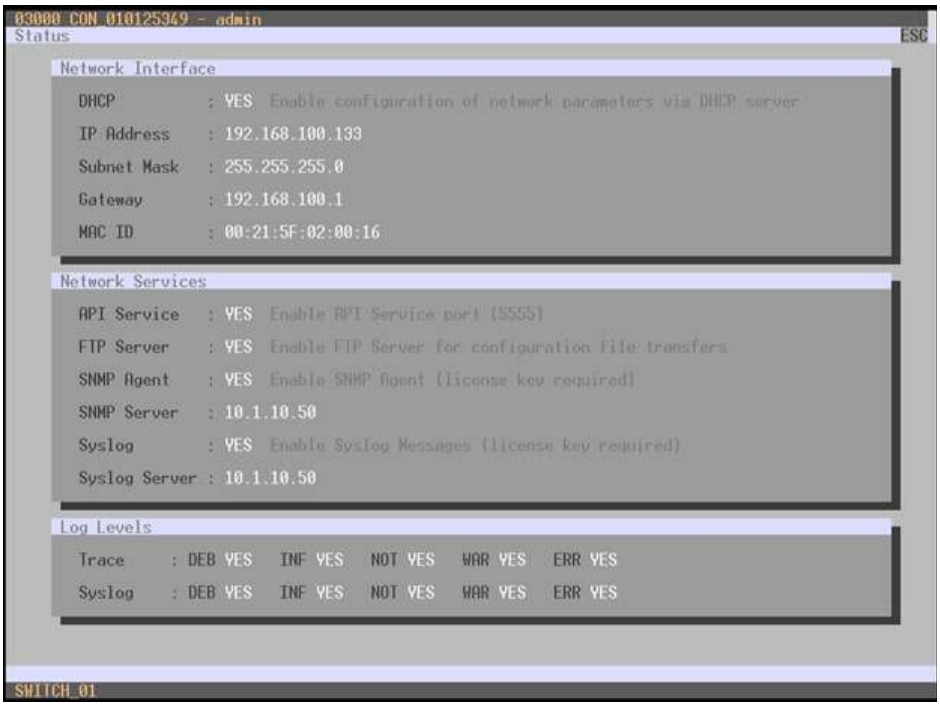
03000 CON 010125949 - admin
Status
ESC
Network Interface
DHCP : YES Enable configuration of network parameters via DHCP server
IP Address : 192.168.100.133
Subnet Mask : 255.255.255.0
Gateway : 192.168.100.1
MAC ID : 00:21:5F:02:00:16
Network Services
API Service : YES Enable API Service port [5555]
FTP Server : YES Enable FTP Server for configuration file transfers
SNMP Agent : YES Enable SNMP Agent [license key required]
SNMP Server : 10.1.10.50
Syslog : YES Enable Syslog Messages [license key required]
Syslog Server : 10.1.10.50
Log Levels
Trace : DEB YES INF YES NOT YES WAR YES ERR YES
Syslog : DEB YES INF YES NOT YES WAR YES ERR YES
SWITCH_01

Figure 102. Viewing Network Status through the OSD

Viewing Network Status through the Java Tool

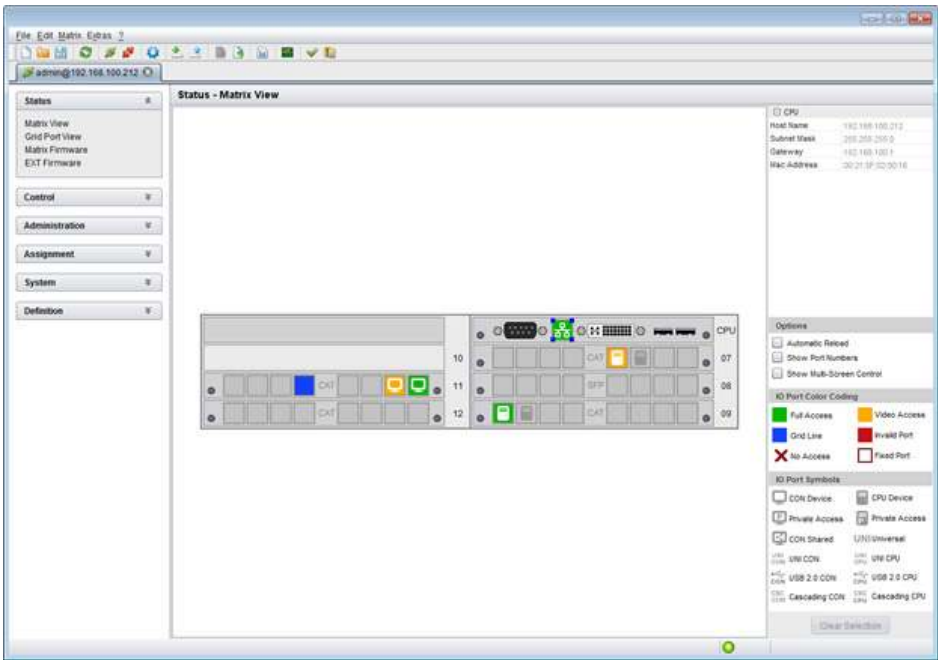

Figure 103. Viewing Network Status through the Java Tool

1. Select **Status > Matrix View** in the task area.
2. Use the left mouse button to click on the network port of the CPU board. The corresponding network status will be shown on the right side of the working area.

Firmware Status Matrix

The current firmware status of the installed boards is shown in this screen. This screen can be accessed through the OSD or the Java Tool.

The following information is shown in this screen:

Field	Description
Name	Description of the modules
Type	Type of the modules by functionality
Ports	Number of ports
Version	Complete description of the firmware version
Date	Date of the firmware version
Status	Module status (Java Tool only)

Viewing Firmware Status through the OSD

➔ Select **Status > Firmware** in the main menu.

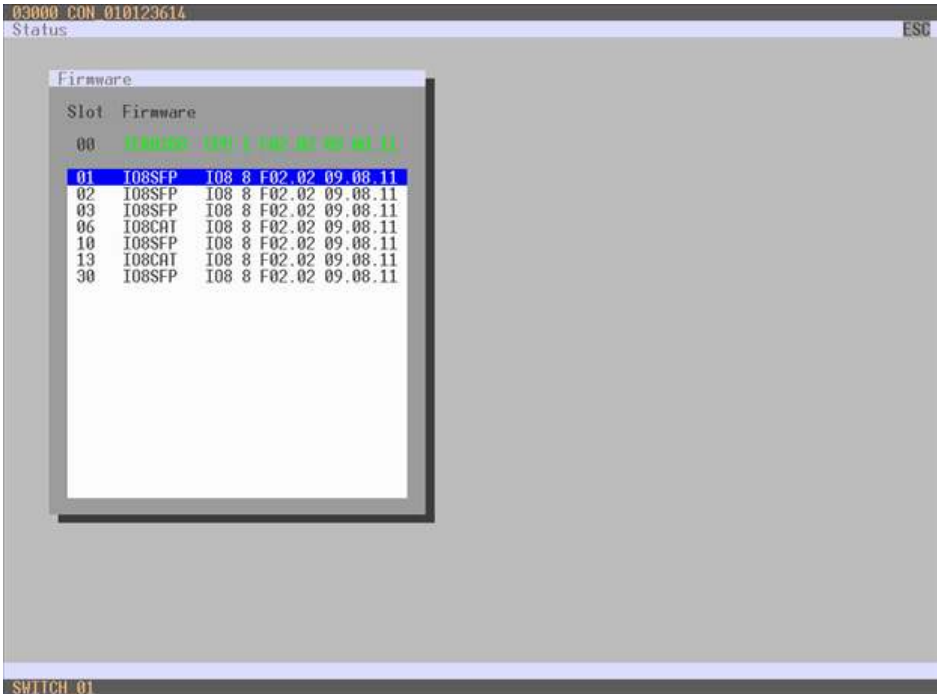

Figure 104. Viewing Firmware Status through the OSD

Viewing Firmware Status through the Java Tool

Select **Status > Matrix Firmware** in the task area.

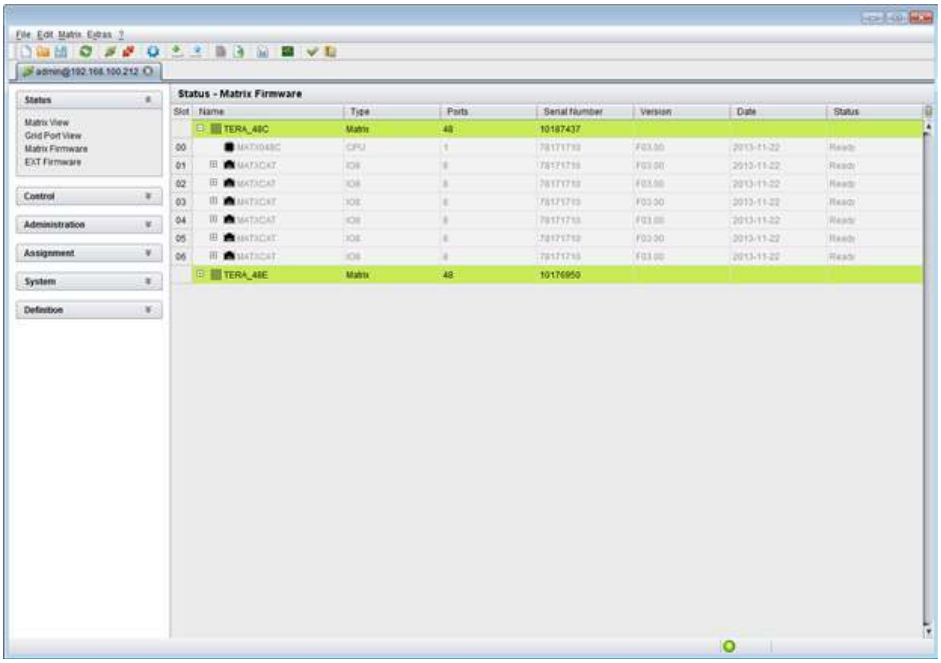

Figure 105. Viewing Firmware Status through the Java Tool

- To read out the firmware status and store it locally (file extension **.dtf**), select **Matrix > Save Firmware Status to File...**
- To read out the overall status of the matrix and store it locally (file extension **.zip**), select **Matrix > Save Status to File...** or press the respective button in the symbol bar.

To get a better overview, the various modules can be expanded and contracted by clicking with the left mouse button on the plus or minus symbols in the **Name** column.

By clicking with the left mouse button on the plus or minus symbol in the upper right corner of the working area (Expand Treeview), information can be expanded and contracted for all modules at once.

Firmware Status Extender

The current firmware status of the connected extenders is shown in this screen. This screen can only be accessed from the Java Tool.

The following information is shown in this screen.

Field	Description
ID	Serial number of the extender
Name	Name assigned to the extender unit
Type	Description of the extender module and its components
Port	I/O port where the extender is connected to the matrix
Version	Current firmware version by component
Date	Date of the current firmware version

➔ Select **Status > EXT Firmware** in the task area.

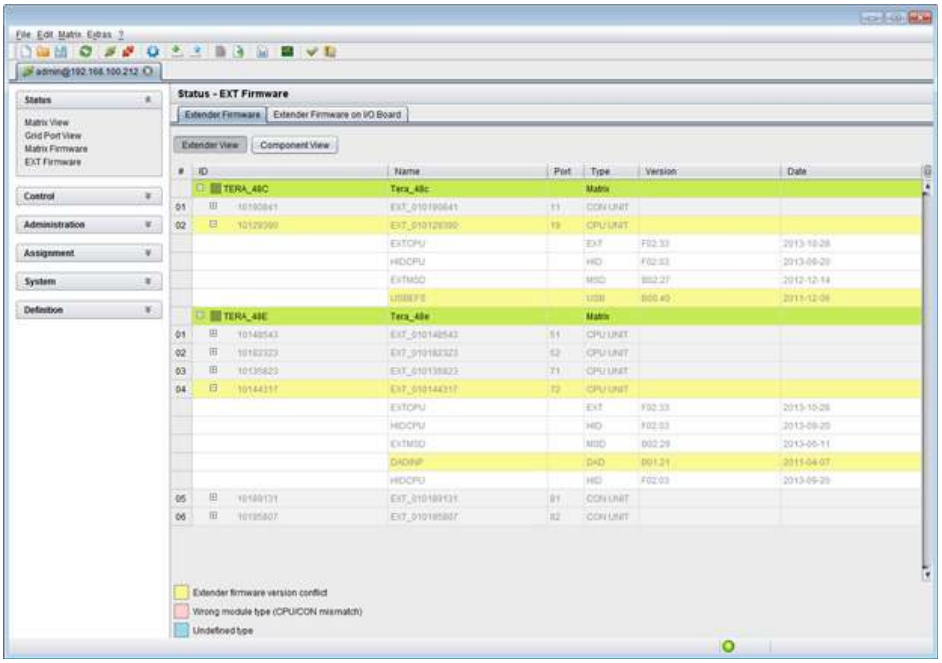

Figure 106. Viewing Firmware Status on the connected Extenders through the Java Tool

Trace Function

All events, e.g. activities and switching operations of the Orion XC matrix, are logged and displayed in this screen. This function is used for diagnostic purposes. This screen can only be accessed from the OSD.

The following information is shown in this menu:

Field	Description
Date	Date stamp
Time	Time stamp
Message	Detailed description of the event

Trace Options

➔ Select **Status > Trace IO Board** in the main menu to check the events on the current I/O board.
➔ Select **Status > Trace Matrix** to check the matrix events.

Syslog Monitoring

Logging of the Orion XC matrix activities, including switching operations and the performance of function critical components like fans or power supply units, is done in this screen. It can only be accessed from the Java Tool.

To start Syslog Monitoring proceed as follows.
➔ Select the **Matrix->Monitoring** in the menu bar, or click the Monitoring icon in the tool bar.

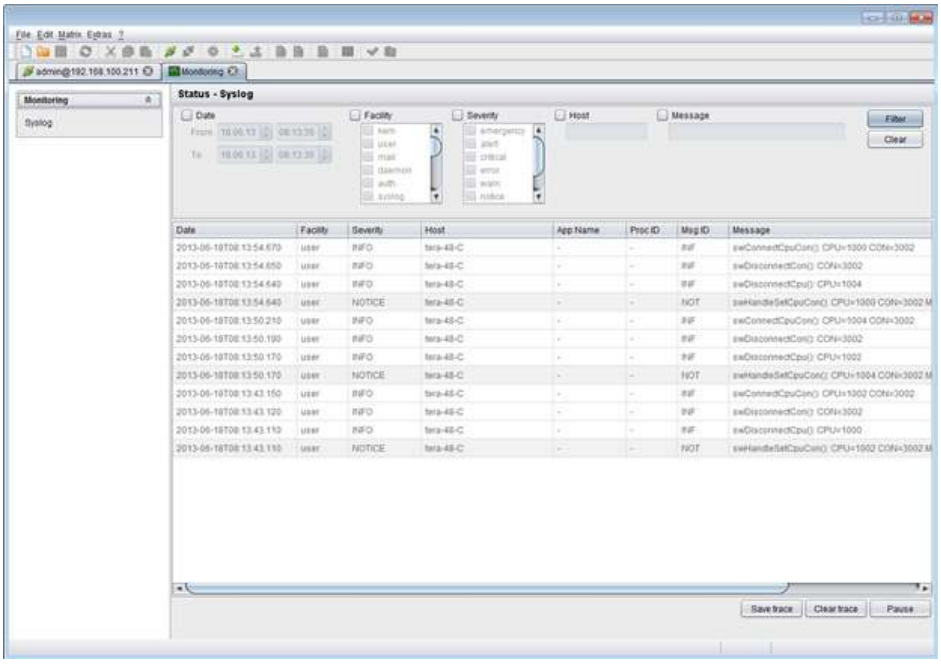

Figure 107. Syslog Monitoring with the Java Tool

The logging of system activities starts when the **Monitoring** menu is opened, and remains active until the tab is closed.

Note: Syslog messages are transmitted by UDP. This uses port 514, which should not be blocked by a firewall.

During logging, the activities are written continuously into logging files and stored locally. This logging process includes a number of options as described below.

Options

➔ Select **Extras > Options** in the menu bar and open the **Syslog** tab. The following options are available:

Option	Description
Log File Directory	Default directory to store the log files
Log File Name	Default name of the log file
Log File Extension	Default extension for the log file
Daily Logfiles	Log files are stored every 24 hours (daily)
Maximum Log File Size (KB)	Allowed maximum size of log file
Maximum Number of Log Files	Allowed maximum number of log files
Autostart	Controls whether the Syslog function will be started automatically in the background when starting the Java Tool
Open Monitoring Tab	Controls whether the Monitoring tab will be opened automatically when starting the Java Tool

Note: On reaching the maximum log file size, a new log file will be created. When reaching the maximum number of log files, the oldest one will be overwritten with the new information.

Filter Function

To filter relevant messages of a number of logged activities of the Orion XC, the Syslog Monitoring offers various filter options.

To set and activate a filter, proceed as follows:

1. Set the desired filter option(s) by activating the respective checkbox(es).
2. Activate the filter settings by pressing the **Filter** button.

To deactivate an activated filter setting, press the **Clear** button.

The following filter options are available:

Option	Description
Date	Messages of a defined date range will be filtered
Facility	Messages of a defined facility will be filtered
Severity	Messages of a defined severity will be filtered
Host	Messages of a defined host will be filtered
Message	Messages with defined text parts will be filtered

Note: Filter options are not valid within the locally stored log files.

Recording Function

All messages shown in the Syslog are equipped with various recording functions.

➔ To store the messages shown in the Syslog (filtered or unfiltered), click the **Save trace** button. The messages will be stored in a .txt file.

➔ To remove the messages shown in the Syslog, click the **Clear trace** button.

➔ To stop recording the messages, press the **Pause** button. To continue, click the button again.

SNMP

The SNMP function allows all function-critical and safety-critical elements of the matrix to be monitored and queried. This function complies with the RFC 1157 standard. The SNMP option can be accessed from the OSD and the Java Tool.

Note: When using SNMP monitoring, the use of a dedicated network to maintain continuous access is strongly recommended.

SNMP Monitoring through the OSD

➔ Select **Configuration > SNMP** in the main menu.

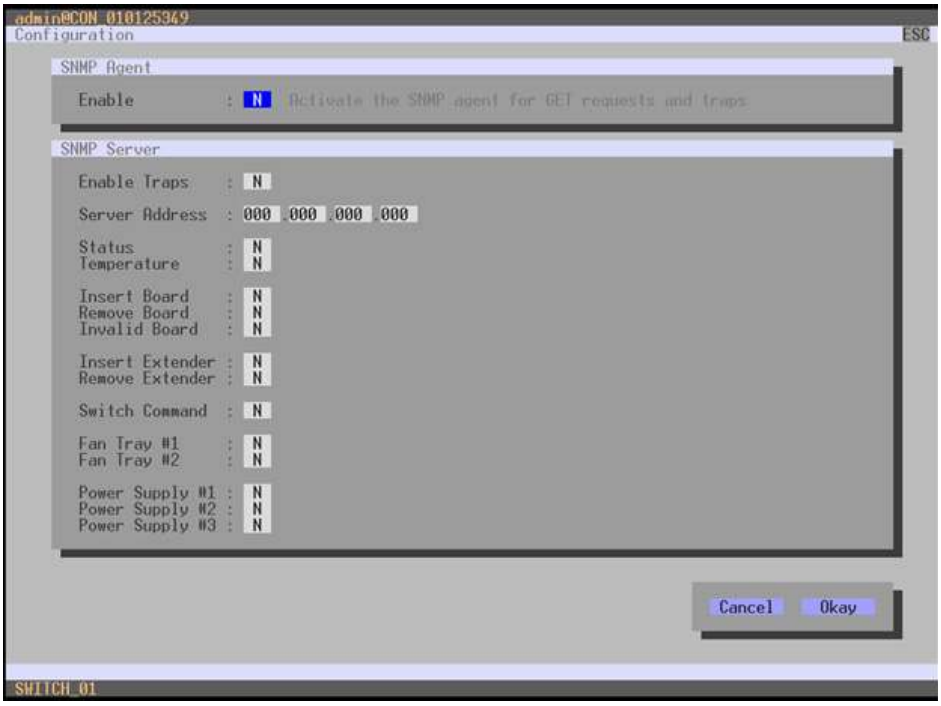

Figure 108. SNMP Monitoring through the OSD

Set the **Enable** option to **Y** (Yes) in the **SNMP Agent** group. By activating this option, permission is granted for an active query of the SNMP agent.

To configure a SNMP server through the OSD, proceed as follows:

1. Select **Configuration > SNMP** in the main menu.
2. Set the **Enable Traps** option to **Y** (Yes) in the **SNMP Server** group. This function allows an active transmission of trap messages from the SNMP agent to the SNMP server.
3. Set the IP address of the SNMP server in **Server Address**.
4. Activate the requested traps by setting them to **Y** (Yes).
5. Confirm the selections by clicking the Okay button.

Note: To activate the SNMP agent or SNMP server, a restart of the matrix is necessary.

The following traps are available.

Trap	Description
Status	Notification about matrix status
Temperature	Notification about temperature within the matrix
Insert Board	Notification about insertion of a new I/O board into a slot
Remove Board	Notification about removal of an I/O board from a slot
Invalid Board	Notification about a faulty I/O board
Insert Extender	Notification about a newly connected extender to the matrix, a switched on extender, or a newly established link between extender and matrix
Remove Extender	Notification about removal of an extender from the matrix, a switched off extender, or an interrupted link between an extender and matrix
Switch Command	Notification about a performed switching operation at the matrix
Fan Tray #1	Notification about the status of fan tray #1
Fan Tray #2	Notification about the status of fan tray #2
Power Supply #1	Notification about the status of power supply unit #1
Power Supply #2	Notification about the status of power supply unit #2
Power Supply #3	Notification about the status of power supply unit #3

SNMP Monitoring through the Java Tool

➔ Select **System > Network** in the task area.

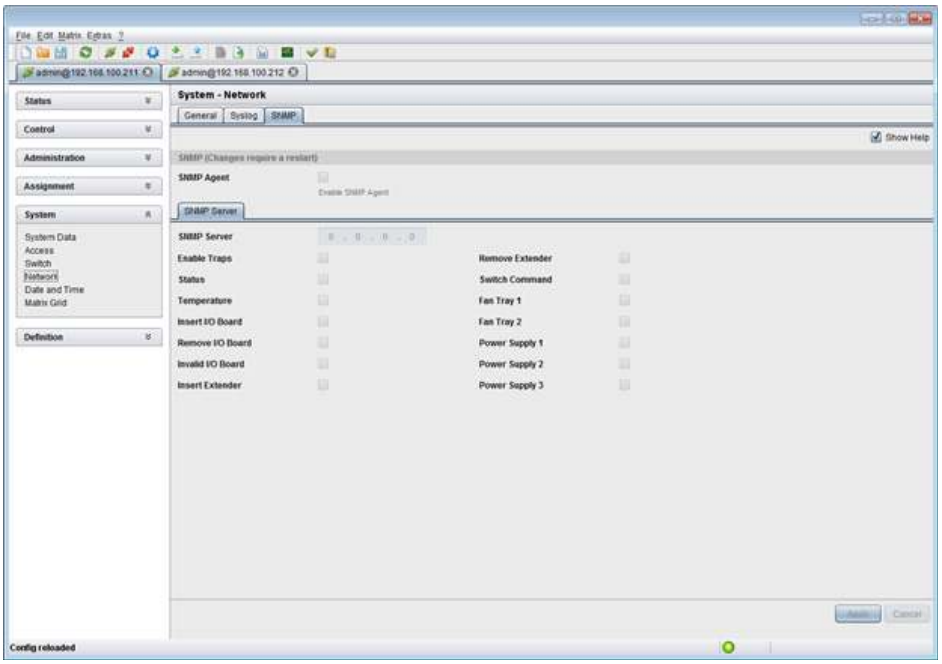

Figure 109. SNMP Monitoring through the Java Tool

Activate the **SNMP Agent** option in the **SNMP** tab. By activating this option, permission is granted for an active query of the SNMP agent.

To configure a SNMP-Server through the Java Tool, proceed as follows.

1. Select **Configuration > Network** in the task area.
2. Check the **Enable Traps** option in the **SNMP Server** tab. This function allows an active transmission of trap messages from the SNMP agent to the SNMP server.
3. Set the IP address of the SNMP in the **SNMP Server** field.
4. Check the desired traps.
5. Click the Apply button.

Note: To activate the SNMP agent or SNMP server, a restart of the matrix is necessary.

System Check

System Check provides a diagnostic ability to check the matrix configuration. This feature detects and displays suboptimal and faulty settings. It is used exclusively as a confidence check, and does not make any active changes in the configuration.

The System Check feature can only be accessed through the Java Tool.

➔ Select the **System Check** symbol in the symbol bar.

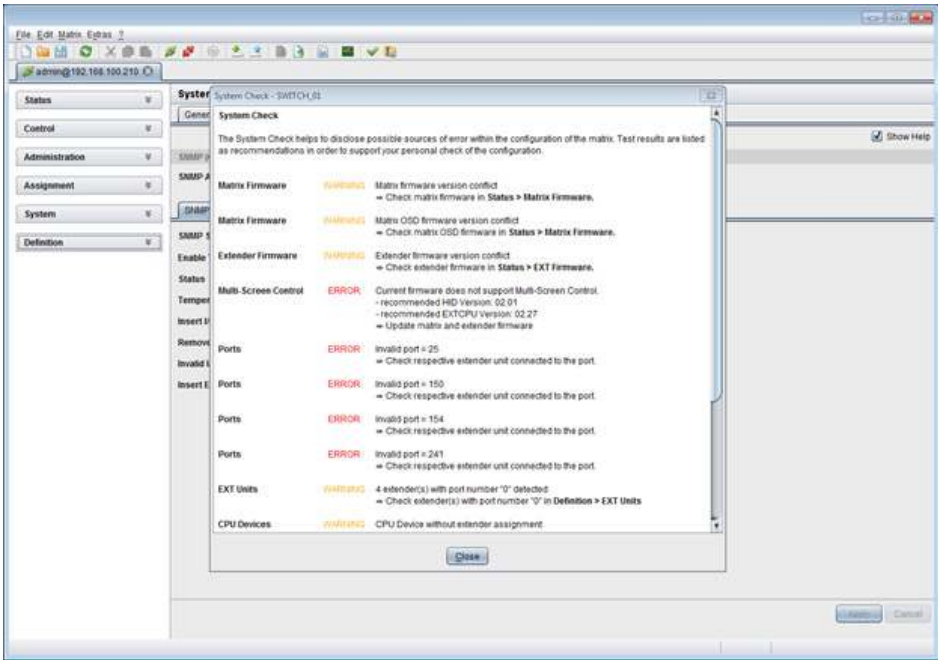
System Check
The System Check helps to disclose possible sources of error within the configuration of the matrix. Test results are listed as recommendations in order to support your personal check of the configuration.
Matrix Firmware
Extender Firmware
Multi-Screen Control
Ports
EXT Units
CPU Devices
Close

Figure 110. System Check through the Java Tool

The following configuration parts are checked:

- Matrix Firmware
- Extender Firmware
- Multi-Screen Control
- Ext Units
- CPU Devices
- CON Devices
- User
- System Configuration
- Matrix Grid

The following notification levels can be shown:

Level	Description
OK (green)	System Check completed without any abnormalities.
WARNING (yellow)	System Check found abnormalities in the configuration that are not system critical, such as incomplete parts of the configuration, firmware differences, duplications or unconnected extenders.
ERROR (red)	System Check found errors in the configuration that can have both functional and system critical influences on the system.

If "WARNING" and "ERROR" messages are generated by the System Check function, the respective problem will be described and a basic guideline to resolve the problem will be provided.

SERVICE AND TECHNICAL SUPPORT

Service Information

Maintenance and Repair

This Unit does not contain any internal user-serviceable parts. In the event a Unit needs repair or maintenance, you must first obtain a Return Authorization (RA) number from Rose Electronics or an authorized repair center. This Return Authorization number must appear on the outside of the shipping container.

See Limited Warranty for more information.

When returning a Unit, it should be double-packed in the original container or equivalent, insured and shipped to:

Rose Electronics
Attn: RA_____
10707 Stancliff Road
Houston, Texas 77099 USA

Technical Support

If you are experiencing problems, or need assistance in setting up, configuring or operating your Orion XC unit, consult the appropriate sections of this manual. If, however, you require additional information or assistance, please contact the Rose Electronics Technical Support Department at:

Phone: (281) 933-7673
E-Mail: TechSupport@rose.com
Web: www.rose.com

Technical Support hours are from: 8:00 am to 6:00 pm CST (USA), Monday through Friday.

Please report any malfunctions in the operation of this Unit or any discrepancies in this manual to the Rose Electronics Technical Support Department.

SAFETY

The Orion XC has been tested for conformance to safety regulations and requirements, and has been certified for international use. Like all electronic equipment, the Orion XC should be used with care. To protect yourself from possible injury and to minimize the risk of damage to the Unit, read and follow these safety instructions.

Follow all instructions and warnings marked on this Unit.
Except where explained in this manual, do not attempt to service this unit yourself.
Do not use this unit near water.
Assure that the placement of this unit is on a stable surface or rack mounted.
Provide proper ventilation and air circulation.
Keep power cord and connection cables clear of obstructions that might cause damage to them.
Use only power cords, power adapter and connection cables designed for this Unit.
Use only a grounded (three-wire) electrical outlet.
Use only the power adapter provided with the unit.
Keep objects that might damage this Unit and liquids that may spill, clear from this Unit. Liquids and foreign objects might come in contact with voltage points that could create a risk of fire or electrical shock.
Operate this Unit only when the cover is in place.
Do not use liquid or aerosol cleaners to clean this Unit. Always unplug this Unit from its electrical outlet before cleaning.
Unplug this Unit from the electrical outlet and refer servicing to a qualified service center if any of the following conditions occur:

- The power cord or connection cables are damaged or frayed.
- The Unit has been exposed to any liquids.
- The Unit does not operate normally when all operating instructions have been followed.
- The Unit has been dropped or the case has been damaged.
- The Unit exhibits a distinct change in performance, indicating a need for service.

Safety and EMC Regulatory Statements

Safety information

Documentation reference symbol. If the product is marked with this symbol, refer to the product documentation to get more information about the product.

WARNING A WARNING in the manual denotes a hazard that can cause injury or death.

CAUTION A CAUTION in the manual denotes a hazard that can damage equipment.

Do not proceed beyond a WARNING or CAUTION notice until you have understood the hazardous conditions and have taken appropriate steps.

Grounding

There must be an un-interruptible safety earth ground from the main power source to the product's input wiring terminals, power cord, or supplied power cord set. Whenever it is likely that the protection has been impaired, disconnect the power cord until the ground has been restored.

Servicing

There are no user-serviceable parts inside these products. Only service-trained personnel must perform any servicing, maintenance, or repair.

The user may adjust only items mentioned in this manual.

Troubleshooting

This section provides support for problems with the Orion XC matrix. It is assumed that fully operational CPU and CON Devices are available, which can be tested over a peer-to-peer connection using CATx or fiber cables. Please refer to the extender manuals, if necessary.

External Failure

Problem	Possible Reason	Solution
Matrix will not power up	Fuse at the standard appliance outlet	➔ Check fuse

Video Interference

Problem	Possible Reason	Solution
Unable to open OSD	OSD Jumper not set on user's extender unit	➔ Set jumper 11 on user's extender unit
Incorrect video display	Cable connection faulty	➔ Check the connections, length and quality of the interconnect cable to the units

Fan Malfunction

Problem	Possible Reason	Solution
Fans do not run, LED **OK** on	Fans defective	➔ Contact your dealer
Fans do not run, LED **OK** off	Power supply	➔ Check power supply and power connection

Power Supply Unit Malfunction

Problem	Possible Reason	Solution
Matrix cannot be started	No power supply available	➔ Check that the power supply cables are connected properly
	Power Supply Units are not switched on	➔ Check switch on the Power Supply Units

Network Error

Problem	Possible Reason	Solution
Network settings are not in use after editing	Restart of the matrix not yet completed	➔ Restart the matrix

Failure at the matrix

Problem	Possible Reason	Solution
Serial control not working or only partially working	CPU and matrix operating at different baud rates.	➔ Synchronize baud settings between CPU and the matrix
Serial control via RJ45 port not working	Wrong network cable	➔ Use a crossover network cable
USB 2.0 Port definitions invalid	Restart of the matrix not yet completed	➔ Restart the matrix

Blank Screen

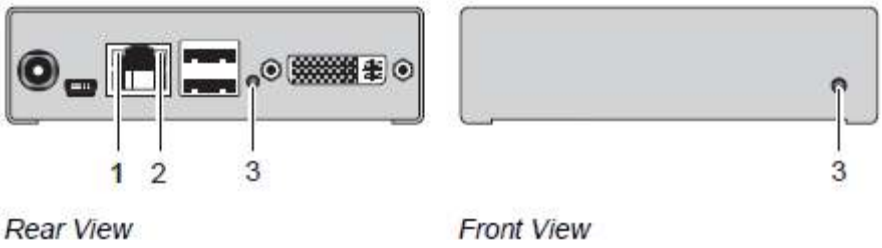

Figure 111. Troubleshooting Blank Screen

Problem	Possible Reason	Solution
Monitors remain blank after switching operation	Switching to a CPU port with no active source (computer, CPU)	➔ Switch to a CPU Port with an active source (computer, CPU).
LED **1** on or LED **2** off	Connections between CON unit, matrix and CPU unit	➔ Check connecting cables and connectors. (No cable, cable break, CPU/CON unit offline, CPU/CON unit connected to the wrong port)
LED **3** off	Power supply	➔ Check power supply units and the connection to the power network

APPENDICES

Appendix A – General Specifications

This section gives the general specifications for the Orion XC connectors, pinouts, cables and dimensions.

Interfaces

The different types of possible connections, and any restrictions on them, are discussed here.

RJ45 (Network)

The communication of the Cat X devices requires a 1000BASE-T connection.

The cabling must be according to EIA/TIA-568-B (1000BASE-T), with RJ45 connectors at both ends. All four wire pairs are used in both directions. The cabling is suitable for a full duplex operation. To connect a computer directly to the network connector, a crossover network cable must be used.

RJ45 (Serial)

The communication takes place with transmission speed of 115.2 KBaud, regardless of the file format. Byte transmission uses eight data bits, a stop bit and no parity bit. Limited hardware handshake (DSR) is possible.

RJ45 (Interconnect)

The communication of the Cat X devices requires a 1000BASE-T connection.

Connector wiring must comply with EIA/TIA-568-B (1000BASE-T), with RJ45 connectors at both ends. All four cable wire pairs are used.

Fiber SFP Type LC (Interconnect)

Communication with fiber devices is performed via Gigabit SFPs that are connected to suitable fibers fitted with LC type connectors.

Note:

- The correct function of the device can only be guaranteed with SFPs provided by Rose Electronics.
- SFP modules can be damaged by electrostatic discharge (ESD). Please consider ESD handling specifications

Interconnect Cable

The cables used to connect the Orion XC to the extenders are described here.

CATx

A point-to-point connection is required. Operation with several patch fields is possible. Routing over an active network component, such as an Ethernet Hub, Router or Matrix, is not allowed.

➔ Avoid routing Cat X cables near power cables.

➔ If the site has 3-phase AC power, try to ensure that CPU Unit and CON Unit are on the same phase.

Notes:

- To maintain regulatory EMC compliance, correctly installed shielded Cat X cable must be used throughout the interconnection link.
- To maintain regulatory EMC compliance, all Cat X cables should have ferrites installed on both cable ends close to the devices.

Type of Interconnect Cable
The Orion XC requires interconnect cabling specified for Gigabit Ethernet (1000BASE-T). The use of solid-core (AWG24), shielded, Cat 5e (or better) is recommended.

Type of Cable	Specifications
Cat X Solid-Core Cable AWG24	S/UTP (Cat 5e) cable according to EIA/TIA-568-B. Four pairs of wires AWG24. Connection according to EIA/TIA-568-B (1000BASE-T).
Cat X Patch Cable AWG26/8	S/UTP (Cat 5e) cable according to EIA/TIA- 568-B. Four pairs of wires AWG26/8. Connection according to EIA/TIA-568-B (1000BASE-T).

The use of flexible cables (patch cables) type AWG26/8 is possible; however, the maximum possible extension distance is halved.

Maximum Acceptable Cable Length

Cat X Installation Cable AWG24	460 ft (140 m)
Cat X Patch Cable AWG26/8	230 ft (70 m)

Fiber

A point-to-point connection is necessary. Operation with multiple patch panels is allowed. Routing over active network components, such as Ethernet Hubs, Matrixes or Routers, is not allowed.

Type of Interconnect Cable
(Cable notations according to VDE)

Type of Cable	Specifications
Single-mode 9µm	■ Two fibers 9µm ■ V(ZN)H 2E9 (in-house patch cable) ■ V(ZN)HH 2E9 (in-house breakout cable) ■ I/AD(ZN)H 4E9 (in-house or outdoor breakout cable, resistant) ■ A/DQ(ZN)B2Y 4G9 (outdoor cable, with protection against rodents)
Multi-mode 50µm	■ Two fibers 50µm ■ I-V(ZN)H 2G50 (in-house patch cable) ■ I/AD(ZN)H 4G50 (in-house or outdoor breakout cable, resistant)
Multi-mode 62.5µm	■ Two fibers 62.5µm ■ I-V(ZN)HH 2G62,5 (in-house breakout cable) ■ A/DQ(ZN)B2Y 4G62,5 (outdoor cable, with protection against rodents)

Only use Single-mode connection cables for fiber connections that are based on 3G SFPs.

Maximum Acceptable Cable Length

Type of cable	1.25 Gbps	3.125 Gbps
Single-mode 9µm	32,800 ft (10,000 m)	16,400 ft (5,000 m)
Multi-mode 50µm (OM3)	3,280 ft (1,000 m)	1,640 ft (500 m)
Multi-mode 50µm	1,300 ft (400 m)	650 ft (200 m)
Multi-mode 62.5µm	650 ft (200 m)	325 ft (100 m)

If single-mode SFPs are used with multi-mode fiber cables, the maximum acceptable cable length can normally be increased.

Type of Connector

Connector	LC Connector

Connector Pinouts

This section shows the pinouts for the connectors on the Orion XC.

RJ45 (Serial)

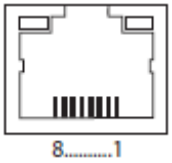

Figure 112. RJ45 Serial Connector Pinouts

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	DCD	3	RTS	5	RxD.	7	CTS
2	DSR	4	GND	6	TxD	8	DTR

RJ45 (Ethernet)

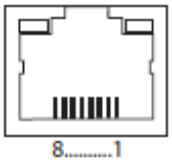

Figure 113. RJ45 Ethernet Connector Pinouts

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	D1+	3	D2+	5	n.c.	7	n.c.
2	D1-	4	n.c.	6	D2-	8	n.c.

I/O Port RJ45 Connector

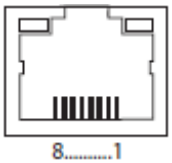

Figure 114. I/O Port RJ45 Connector Pinouts

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	D1+	3	D2+	5	D3-	7	D4+
2	D1-	4	D3+	6	D2-	8	D4-

I/O Port Fiber SFP Type LC Connector

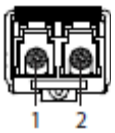

Figure 115. I/O Port Fiber Type LC Connector Pinouts

Diode	Signal
1	Data OUT
2	Data IN

Power Supply

Voltage

All 8 port models	0.7 A, 100-240 VAC, 50/60 Hz
All 16 port, 32 port and 48 port models	1.4 A, 100-240 VAC, 50/60 Hz
All 80 port and 64 port models	2.3 A, 100-240 VAC, 50/60 Hz

Power Requirement

All 8-port models	max. 13 W
All 16-port models	max. 40 W
All 32-port models	max. 65 W
All 48-port models	max. 90 W
All 64-port models	max. 105 W
All 80-port models	max. 125 W

Environmental Conditions

Operating Temperature	41°F to 113°F (5°C to 45°C)
Storage Temperature	-13°F to 140°F (-25°C to 60°C)
Relative Humidity	Max. 80% non-condensing

Size

All 8-port models

Matrix	8.7" x 5.7" x 1.8" (220mm x 146mm x 45 mm)
Shipping Box	21.7" x 14.4" x 4.5" (550mm x 365mm x 115 mm)

All 16 port, 32 port, 48 port, 64 and 80 port models

Matrix	17.4" x 17.1" x 1.8" (443mm x 435mm x 45 mm)
Shipping Box	23.7" x 20.7" x 6.1" (602mm x 526mm x 154 mm)

Shipping Weight

All 8 port models

Matrix	1.9 lb (0.9 kg)
Shipping Box	7.5 lb (3.4 kg)

All 16 port models

Matrix	8.6 lb (3.9 kg)
Shipping Box	12.8 lb (5.8 kg)

All 32 port models

Matrix	8.8 lb (4.0 kg)
Shipping Box	13.0 lb (5.9 kg)

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All 48 port models

Matrix	9.0 lb (4.1 kg)
Shipping Box	13.2 lb (6.0 kg)

All 64 port models

Matrix	15.4 lb (7.0 kg)
Shipping Box	20.7 lb (9.4 kg)

All 80 port models

Matrix	15.9 lb (7.2 kg)
Shipping Box	21.1 lb (9.6 kg)

MTBF

The following table contains the mean time between failure (MTBF) in power-on hours (POH). The estimate is based on the FIT rates of the parts included. FIT rates are based on normalized environmental conditions of T = 140°F and activation energy (Ea) of 0.7 eV. Calculations are based on 90% confidence limit.

It is estimated that temperature inside the housing will be 27°F higher than the ambient temperature. Therefore, the MTBF calculation refers to an ambient temperature of 113°F. The humidity is limited to 60%.

Matrix	Chassis	Per Fan	Per PSU
Orion XC 80 Port CATx Only	90,690	280,000	238,800
Orion XC 80 Port Fiber Only	83,350	280,000	238,800
Orion XC 80 Port Mixed CATx and Fiber	87,250	280,000	238,800
Orion XC 64 Port CATx Only	97,300	280,000	238,800
Orion XC 64 Port Fiber Only	92,900	280,000	238,800
Orion XC 64 Port Mixed CATx and Fiber	95,600	280,000	238,800
Orion XC 48 Port CATx Only	140,000	280,000	295,700
Orion XC 48 Port Fiber Only	133,400	280,000	295,700
Orion XC 32 Port CATx Only	165,300	280,000	295,700
Orion XC 32 Port Fiber Only	161,200	280,000	295,700
Orion XC 16 Port CATx Only	208,322	280,000	295,700
Orion XC 16 Port Fiber Only	206,100	280,000	295,700
All Orion XC 8 Port Models	684,700	280,000	309,700

Appendix B – Part numbers

Orion XC Unit

Part #	Description
OXS-XC080-TP	Orion XC, 80 Port Matrix Switch, CATx, Redundant PSU, 2U size
OXS-XC080-FS	Orion XC, 80 Port Matrix Switch, Fiber SM, Redundant PSU, 2U size
OXS-XC48TP32FS	Orion XC, 80 Port Matrix Switch, 48 CATx ports, 32 Fiber SM ports, Redundant PSU, 2U size
OXS-XC064-TP	Orion XC, 64 Port Matrix Switch, CATx, Redundant PSU, 2U size
OXS-XC064-FS	Orion XC, 64 Port Matrix Switch, Fiber SM, Redundant PSU, 2U size
OXS-XC48TP16FS	Orion XC, 64 Port Matrix Switch, 48 CATx ports, 16 Fiber SM ports, Redundant PSU, 2U size
OXS-XC048-TP	Orion XC, 48 Port Matrix Switch, CATx, Redundant PSU, 1U size
OXS-XC048-FS	Orion XC, 4 8 Port Matrix Switch, Fiber SM, Redundant PSU, 1U size
OXS-XC032-TP	Orion XC, 32 Port Matrix Switch, CATx, Redundant PSU, 1U size
OXS-XC032-FS	Orion XC, 32 Port Matrix Switch, Fiber SM, Redundant PSU, 1U size
OXS-XC016-TP	Orion XC, 16 Port Matrix Switch, CATx, Redundant PSU, 1U size
OXS-XC016-FS	Orion XC, 16 Port Matrix Switch, Fiber SM, Redundant PSU, 1U size
OXS-XC008-TP	Orion XC, 8 Port Matrix Switch, CATx, Redundant PSU, 1U size
OXS-XC008-FS	Orion XC, 8 Port Matrix Switch, Fiber SM, Redundant PSU, 1U size
SW-OXS-JT	Orion XC, Option Bundle 1: Java Tool + Extended Switching + Presets
SW-OXS-JT+API	Orion XC, Option Bundle 2: Bundle 1 + API
SW-OXS-XC-SNMP+SL	Orion XC, Option Bundle 3: SNMP & SYSLOG
SW-OXS-XC-MG	Orion XC, Option Bundle 4: Matrix Grid / Cascading / Stacking
SW-OXS-XC-MSC	Orion XC, Option Bundle 5: Multi-Screen Control

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